Elements of
AGRICULTURAL ECONOMICS

BY

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AND

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To

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and

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Preface

In presenting this book, the authors make no claim to an exhaustive treatment of the subject matter usually considered as a part of agricultural economics. On the contrary, attention has been limited to those segments that current discussions indicate are of greatest immediate importance.

To introduce the student to the subject of agricultural economics, there is, first, a series of four chapters (Part I), which deals with the specific nature of economics, agricultural economics, economic problems of agriculture, our economic systems, and some elementary price concepts. These chapters are designed to provide the basic information and type of approach needed for appreciation of the discussions given in the remaining sections of the book.

The economics of agricultural production is treated in a group of eight chapters (Part II), which includes the characteristics of modern farming, the geographic distribution of production in the United States (types of farming), the organization and management of individual farms, farm records as aids to the farmer, the economics of soil conservation, and the economics of land tenure.

There are five chapters on the marketing of farm products (Part III). The treatment is largely conventional and covers the nature of marketing from a functional point of view, the part played by markets and market middlemen, and the ways in which specific farm products pass through the trade channels. Two of the five chapters of this section deal with cooperation, especially as it has been developed through marketing and purchasing cooperatives, and the extent and magnitude of the cooperative activity as indicated by ten outstanding farm cooperatives operating in the United States.

Agricultural finance and insurance are subjects that are treated in a group of four chapters (Part IV), the first three of which deal with the nature and use of farm credit, the structure and operation of Federal Farm Credit systems, and the private

sources of funds that are available to farmers. The nature of risks and the purpose of insurance, including the principal types of insurance used by farmers, the sources of insurance, and a brief description of Federal Crop Insurance, are considered in the last of these three chapters.

Over the past thirty years, the Congress of the United States has been deeply concerned with national price policies and programs. To some extent, at least, the Congress has enacted legislation in which the traditional policy of noninterference and nonparticipation in private businesses has been modified. Two of the five chapters (Part V) devoted to the subject of policies direct attention to the earlier efforts of the Congress to develop a price policy. The first of these chapters develops the story from the early 20's to the creation and final failure of the Federal Farm Board. The second chapter carries the account from the enactment of the first Agricultural Adjustment Administration legislation up to and including the Agricultural Act of 1949.

Our farm policies have been determined to no small extent by the farmer organizations. In recent years, the Grange, the Farmers Union, and the Farm Bureau have wielded great influence in the formulation and the enactment into law of these policies. For this reason, a chapter on farmer organizations is included in this section of the book, written from the point of view of their operation on the national level. Attention is given, however, to their origin, the farmer groups they represent, how they are organized, and how they operate on the state and community levels.

No discussion of policies could ignore trade barriers and how they affect economic activities and conditions of farmers. In this book, the subject is treated from the standpoint of international trade. Attention is directed to the fundamental bases upon which such trade rests, the types of barriers that have been devised and put into effect, and the prospects for a freer international trade.

The final chapter in the book describes and discusses the new price support proposal and production control program of the Secretary of Agriculture, the Honorable Charles F. Brannan.

The authors wish to acknowledge the assistance they have received from others in the preparation of the book. Gunnar Lange, while a colleague of the authors, taught this subject and

suggested the content of the course. For the collection of the data contained in the chapter on "Farmer Organizations," we are indebted to Francis E. McVay, a keen critic, who suggested many changes that, in the opinion of the authors, helped to clarify the subject. Professors R. E. L. Greene, H. Brooks James, Rudolf Freund, W. W. McPherson, and W. H. Pierce have been helpful in the improvement of the contents and in the arrangement of the subject matter.

It is in order also to express appreciation for the able assistance received from Miss Margaret K. Fleming, who has had general supervision of the text. Her help in assembling information and in editing the manuscript has been especially noteworthy. To Miss Clara L. Gilbert must go the authors' thanks for the patience and the work associated with the typing of the text. Florence P. Forster, the wife of the senior author, checked the references for accuracy.

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Elements of
AGRICULTURAL ECONOMICS

PART I—INTRODUCTION

The Nature of Agricultural Economics

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CHAPTER 1

The Nature of Agricultural Economics

AGRICULTURAL economics is an applied science, and as such, it is concerned with the economic problems that are associated with the farmer's efforts to make a living. These problems, as every farm boy appreciates, are numerous and varied in character. For the most part they have been identified and described; and economic categories, such as production, marketing, and financing, under which most problems can be classified, have been established.

A significant aspect of agricultural economics as an applied science is the formulation of methods, techniques, and procedures by which these problems may be solved. This is perhaps the most difficult function that the agricultural economist is called upon to perform. This statement is subject to verification. It is well known that the volume of any solid body changes in response to changes in temperatures. This relationship between changes in the volume of solids and changes in temperature is called the "coefficient of expansion." To determine such coefficient, the physicist conducts laboratory experiments under which all factors are subject to his control. Except in a few instances, the agricultural economist cannot use such laboratory methods. Suppose, for instance, that the relation between changes in the price and the quantity demanded or quantity supplied for a commodity is required. This relation can be expressed, as in the case of a solid, as a coefficient. To determine such coefficients for commodities, the agricultural economist, except to a limited extent, cannot resort to laboratory experiments for the simple reason that the factors involved are not subject to this control. This being the case, means other than controlled experiments must be devised to determine what may be called "economic coefficients."

Nature and Methods of Science

To determine the relations between sets of related observations requires the application of the scientific method. A brief consideration of the nature of a science, therefore, will be helpful. The significance of a science is the methods used rather than the results obtained. From this statement it should not be inferred that the results of a science are not important. On the contrary, they are of great significance since they exert a powerful, and often a revolutionary, influence on human behavior. The results, whether significant or not, flow from the method employed. Prior to the discovery of the scientific method, the explanation of a given series of observations was largely, if not wholly, a matter of opinion. For example, to an observer, the earth appeared flat, and the sun appeared to revolve about the earth. From these observations it was concluded that the earth was the center of the universe. But, with the development and the application of scientific methods, it was determined that the sun did not revolve around the earth, but the earth revolved around the sun. As the scientific method was applied more widely, the underlying causes of phenomena were discovered. For example, in the case of observed diseases, the cause, usually a germ, is discovered. Out of this discovery and by the further application of the scientific method remedies are provided and applied. The distinctive characteristic of the scientific method is, therefore, the provision for the techniques and logics by which the results obtained are independent of the individual conducting the investigation. To be more specific, the method of approach to any problem is "objective"[1] and not "subjective."

Because the knowledge obtained from the use of the scientific method is seldom if ever conclusive, usually theories are necessary as aids to the tentative interpretation of observed results. In most cases the scientific method provides the means by which the correctness of these theories can be tested.[2] As theories are subjected to repeated testing, there may emerge principles

[1] "Objective" means that the methods used are such that results will be independent of what the individual may desire.

[2] This is not true of those theories that assist in the interpretation of natural phenomena (for example, the theory of organic evolution), because such theories cannot be subject to repeated testing.

or laws that summarize or permit a generalization as to the behavior of forces under stipulated conditions. There is, however, no ground for the assumption that any principle or law is more than tentative because there is always the possibility that what appears "beyond any reasonable doubt to be correct" may prove, on further experimentation, to be of doubtful validity. One example of this may be cited. For years farmers believed that yellow corn gave much better results in feeding hogs than white corn; however, chemical analysis, a highly scientific procedure, showed no difference in the chemical composition of the corn. The farmers' contention was later proved correct, however, by the discovery of vitamins, the presence of which could not have been detected by the chemical analysis available at the time.

Types of Sciences

Science may be stated also in terms of specific type or kind of knowledge. Thus it is proper to speak of the science of biology or physics or chemistry. These sciences are often referred to as "disciplines", which means that they are systematic bodies of knowledge that contain statements of laws and principles universally accepted as correct.[3] Sciences thus defined have been classified into two mutually exclusive groups: (1) the physical sciences and (2) the social sciences. The physical sciences are those that deal with the physical universe; they include astronomy, biology, geology, chemistry, and physics. The social sciences are concerned with human relations; they include economics, sociology, psychology, jurisprudence, and politics. Each science, physical or social, again may be divided into two classes—"pure" and "applied." By a "pure science" is meant one that is concerned with the collection and analysis of data and the formulation of laws and principles, without concern, at least too much, with the mundane application of the results. Although this is a correct statement of a pure science, it is doubtful if any extended effort, at least in modern times, has ever been made in the field of pure science without an eye on the practical aspects of the results.

An "applied science" is one in which the scientist is concerned with the solution of a specific problem. In such an undertaking

[3] The word "correct" is used in an exclusive, rather than in an absolute, sense.

he may depend upon the "pure" scientist for such laws, principles, or concrete data as may be available. But the word "applied" has a much more fundamental meaning than that implied in the foregoing statement. The scientist working in the applied field may be obliged to test the results collected or the laws or principles formulated by the pure scientist. The applied science, therefore, is not simply a device for using a pure science; on the contrary, an applied science is a science in its own right.

An example will help to distinguish a pure from an applied science. A specific crop or animal may be affected by some pest. In such a case, it would be, and indeed is, the role of the pure science of entomology to study the anatomical structure of such a pest, its methods of feeding, and other characteristics. The role of the applied science of entomology would be to discover the treatment that might be used to control the pest without destroying the plant or animal attacked. To the extent to which such controls must be discovered through the application of the scientific method, it becomes an applied science and, as such, develops rules, laws, and principles applicable to the solution of specific problems.

Agricultural Economics

In a similar fashion, economics—the science that deals with those human activities and relations arising out of man's effort to make a living—is a pure science, and agricultural economics is one of its applied phases. Economics supplies the laws and principles governing economic behavior and provides many, although not all, of the techniques for analyzing economic problems. The laws, principles, and techniques of economics can be applied to the solution of most of the economic problems of the farmer. But their application requires, as in the case of all applied sciences, the development of techniques, rules, procedures, and principles that are applicable to the solution of specific problems. An illustration or two will be sufficient to indicate the relation between economics and agricultural economics.

There is an economic law to the effect that, for a specific commodity on a given market at a given time, the quantity demanded varies inversely with the price. This is a statement of the famous law of supply and demand. A corollary to this law

can be stated as follows: As the quantity of a product offered for sale increases, the price will decline. This deduction, as well as the law itself, has important implications. Suppose that the entomologist, to revert to the previous example, were able to devise controls for an insect that was reducing the output of a given crop. The question would arise as to whether such controls would be of advantage to the farmer.

The answer to a question of this sort would depend upon the response of prices to changes in output.[4] If the price decline were of such a nature that the total value of the crop would be the same before and after the control measures were used, the answer would be No. This is indicated in the following tabulation:

Effectiveness of Control Measures	*Production (000,000 units)*	*Price*	*Value (millions)*
None	10	$100 0	$1,000
10 per cent	11	90.9	1,000
20 per cent	12	83 3	1,000

There are, however, two other possibilities. It may be that the price, although it would decline with an increase in production, would not decline as rapidly as the quantity increased; in this case the answer would be Yes.

The effect of this behavior of prices may be illustrated as follows:

Effectiveness of Control Measures	*Production (000,000 units)*	*Price*	*Value (millions)*
None	10	$100 0	$1,000
10 per cent	11	95.0	1,045
20 per cent	12	90.0	1,080

A third type of price response is one in which the price declined much more rapidly than the quantity increased. This would give a constantly diminishing total value, and the answer would be No.

Effectiveness of Control Measures	*Production (000,000 units)*	*Price*	*Value (millions)*
None	10	$100.0	$1,000
10 per cent	11	80.0	880
20 per cent	12	60 0	720

[4] It is assumed that an application of the controls would increase output

The question may occur to the reader: Why use control measures in those cases in which the farmer will gain nothing or will incur substantial losses? This apparent paradox may be explained. The effect on price is the result of the output of all producers and not simply the output of one grower or a few growers. In those cases in which the business or productive units are small, numerous, and highly competitive, the output of any one grower has very little or no effect on total production and hence no effect on price.[5] An individual grower can gain, therefore, from the use of controls only if farmers generally are not using disease control measures. In all such cases, a grower using the control increases his output, but the price does not decline since there is little if any change in total output. In all such cases, the grower's net gain will be the difference between the value of the additional output due to controls and the cost of the controls.

The benefits that the individual producer may obtain from the adoption of production techniques and practices may disappear when all farmers adopt these means of increasing output. Whether or not this will occur depends largely on the rate of response of prices to changes in output. This statement may produce in the mind of the reader a perplexing dilemma: Technical devices and approved practices designed to increase output will not, in the long run, benefit producers. Indeed, the most debatable question in agriculture is: "Who gets the benefits of technical improvements in agricultural production?" Although such a question cannot be considered at this time, it can be said that whenever a technical improvement is widely adopted, these benefits are largely transferred to the general public and that the farmer, as a part of the public, is benefited. Since, however, the introduction and use of technical improvements is a continuous process, the alert farmers, those who first put the improvements into effect, stand to benefit, and often markedly so, from their use.

Agricultural Economics Defined

From this discussion, it is possible to formulate, at least provisionally, a definition of agricultural economics. It is certainly

[5] One of the conditions of pure competition is that the output of any producer has little or no effect on price.

an applied science since it is concerned with the solution of the economic problems of agriculture. But to perform this function adequately the agricultural economist must first identify, describe, and classify these problems. If these tasks are not performed, solutions at best will fall exclusively into the nonscientific "trial and error" category. Hence, it may be said that agricultural economics is an applied science and, as such, is concerned with the identification, description, and classification of the economic problems of agriculture, to the end that these problems may be solved. This definition does not imply that these problems, even if properly identified and described, can always be resolved, but it does imply that problem-solution is the chief objective of agricultural economics.

Agricultural Economics and Other Sciences

It would be a grave error to infer from what has been said that economics is the only science upon which the agricultural economist depends. The applied or technical agricultural sciences, such as agronomy, animal industry, and agricultural engineering, contribute data showing the effect of various types of practices and equipment on output. Such information is helpful, indeed is indispensable, to the agricultural economist in dealing with problems of production efficiency.

Again, the determination of the effect of any technical practice considered alone or in combination with other practices requires that records and often complete farm accounts be kept. For assistance in this sphere the agricultural economist depends upon the science of bookkeeping and accounting, which has developed rules and procedures by which accurate data on any phase of the farm business can be obtained. But, as in the case of most contributing sciences, the rules and procedures may have to be modified to fit the nature of the specific problem under investigation.

Statistics is another science that has been used effectively by the agricultural economist. This science is helpful in supplying methods by which data regarding specific farm problems can be collected, analyzed, and evaluated.

It thus happens that various sciences other than economics may contribute to the solution of the varied economic problems of agriculture. It is the task of the agricultural economist to

determine how such sciences should be used. This is by no means an easy responsibility.

Questions

1. Why is agricultural economics called an applied science?
2. How does an applied science differ from a pure science?
3. What is the basis for classifying sciences into physical and social?
4. State the conditions under which a farmer may benefit from the adoption of an "approved practice."
5. Why is it that when all farmers adopt an improved practice the benefits formerly enjoyed by a few may disappear?
6. Name some of the sciences that contribute to the content of agricultural economics.
7. Define agricultural economics

References

Gray, Lewis Cecil, *Introduction to Agricultural Economics*, Chapter 1. New York: The Macmillan Company, 1924.

Hibbard, Benjamin Horace, *Agricultural Economics*, Chapter 1. New York: McGraw-Hill Book Company, Inc., 1948

Nourse, Edwin G., *Agricultural Economics*, Introduction Chicago: The University of Chicago Press, 1916.

Stigler, George J., *The Theory of Price*, Chapter 1. New York: The Macmillan Company, 1946.

Taylor, Henry C., *Outlines of Agricultural Economics*, Chapter 1. New York: The Macmillan Company, 1924.

CHAPTER 2

The Scope of Agricultural Economics

IN CHAPTER 1 the word "problem" is used frequently without any explanation as to what it means. This defect must be removed since in this chapter the scope of agricultural economics, or its metes and bounds, will be the chief subject of discussion. A problem as such can be identified as a situation that arises about which there is some doubt or uncertainty as to the course of action to be taken. This is often referred to as the "problematic situation." A simple case may help to clarify what these terms mean. Suppose a farmer has a storage bin $25' \times 5' \times 5'$ or of 625 cubic feet capacity. He has a crop of wheat about to be harvested, and he is in doubt as to whether or not the bin is big enough to store the oncoming harvest. First, it is necessary for him to determine the actual capacity of the bin in terms of bushels of wheat. The capacity of the bin in these terms is easily calculated by multiplying its cubic content by 0.8[1] ($625 \times 0.8 = 500$). In this case the capacity of the bin is 500 bushels. Second, the farmer must make an estimate of the wheat harvest. Suppose it is 600 bushels. Then the problem has been solved—that is, the bin is not large enough to store the harvest—and hence some arrangement must be made to store the additional 100 bushels of grain.

Economic "problematic situations" are not as simple nor as easily identified as the problem of the storage bin. Nevertheless, the elements are the same. A farmer who has a tenant may be confronted with the problem of determining how the income from a specific enterprise should be divided between himself and his tenant. This is the "problematic situation": There is some doubt as to the equitable division of the receipts. Such problematic situations are not as likely to arise in an old and well-established agriculture; in such situations the division of the

[1] Eight-tenths is the reciprocal of the cubic content of a bushel measure—that is, 1/1.25.

receipts is determined largely by custom. But these problems will always emerge when a system of farming is undergoing radical changes. Let it be supposed that a farmer is planning to change his system of farming from crops to a combination of crops and livestock. Since livestock is the new element in the situation, its inclusion in the system of farming raises doubt and uncertainty as to how the income from livestock should be divided between the owner and the tenant. Traditions and customs are of no great assistance. The farmer may solve this problem first by formulating an hypothesis as to how the division may be made. Such an hypothesis might be stated as follows: "Receipts should be divided according to the contributions made to the livestock enterprise by each of the parties involved." Then, the owner and the tenant must determine the extent of these contributions. Suppose that such determination shows that the owner is contributing the land, buildings, livestock, and feed, which amount to 75 per cent of the total contributions. Then, on the basis of the hypothesis, he would receive 75 per cent of the receipts. This, it must be granted, is an over-simplification of a rather difficult problem. Nevertheless, procedures for solving this problem have been developed by agricultural economists and have been effectively applied.

The Emergence of Economic Problems of Agriculture

Since the beginning of the 19th century the status of agriculture has gradually changed from a self-contained economy to an interdependent sector of a vast and complicated economic system. At first slowly but with increasing momentum, the economic problems of the farmer grew in number and complexity. During the greater part of the 19th century, attention of the nation was focused on the acquisition and disposition of the public domain. It was during this century that the land basis of agriculture was established. As the land assigned to farming increased, the problems that first emerged were those growing out of the difficult task of getting land into cultivation, of creating farming units, and of producing farm products. It was not until after 1850 that a number of acute economic problems arose, centered largely around the disposition of the rapidly increasing output of farm products. One writer has characterized the farmer's position as follows:

He (the farmer) perceived that his produce fed the city hordes and that its exportation helped pay for foreign investments in American manufacturing, transportation, and mining. He was keenly aware of the wealth that was piling up in cities, for his wife and children were demanding the luxuries of city folks. He saw that railroad managers, grain-elevator owners, bankers and loan sharks, farm-machinery monopolists, commission men, and speculators were all flourishing, while he, on whom all these others depended, staggered under an increasing burden that was crushing him into tenancy and serfdom.[2]

Although this statement may appear exaggerated, it is a correct description of the conditions as the farmer saw and interpreted them. It was the obvious plight of the farmer that focused the attention of the farm leaders, statesmen, and economists on the economic problems of agriculture. These problems could not be ignored, although they presented characteristics that were not anticipated when the Federal government was created.

It became clear that farming, whatever it may have been in the past, was no longer an independent sector and that national policies and programs affecting farming, based upon such an assumption, were no longer tenable. On the contrary, the notion became generally accepted that farming is an integral part of the national economy, the various sectors of which are united under a common exchange system. This being so, the economic problems of the farmer do not arise solely within the agriculture but may grow out of conditions existing, at any given time, within the economy as a whole. One student has stated the case thus:

Its (agriculture) growing dependence on the exchange system makes agriculture increasingly vulnerable to business fluctuations. In an industrial economy, this dependency may well be the Achilles' heel of agriculture. Such vulnerability has already given rise to a host of price and income problems in agriculture. It is these problems, rooted in the instability of industrial production and employment, and mainly short-run induration (in that at times the situation improves quickly and then worsens quickly), that have claimed most of the attention of farm groups, legislators, and the public. For the most part, they have crowded from the scene the fundamental task of correcting the widespread underemployment in agriculture.[3]

[2] U. S. D. A. *Yearbook*, 1940, "Farmers in a Changing World," p. 243.

[3] From *Agriculture in an Unstable Economy*, by T. W. Schultz. Copyright 1945. Courtesy of McGraw-Hill Book Company.

Allocation of Resources

This wider and more rational view of the national economy made identification and description of economic problems indispensable to the formulation of effective national policies and action programs affecting farming. Broadly considered, these problems center around the allocation and use of all available resources and the distribution of the national income resulting from their use.

Therefore, the foremost problem of a progressive nation is the allocation of the productive resources among the economic sectors. This is important because errors made in resource allocation tend to create maladjustments in the production of specific goods and services. When these maladjustments occur, there are either more or less goods and services of specific kinds available than are needed, not in an absolute sense, but relative to other goods and services. Minor "dislocations," if the results are not cumulative, are of no great economic importance. It is only when they assume major proportions that they may, and usually do, cause unstable economic conditions normally characterized by alternating periods of "prosperity" and "depression" during which the productive balance of the nation is seriously affected.

The elements affecting the sector allocation of resources are: (1) the relative importance of land, labor, capital, and management in the production of specific types of goods and services; (2) the degree of factor mobility; (3) the extent of the control that individuals and/or corporations may exercise over the use of the factors of production. Land, a relatively large element of cost in farming, is not subject to change over short periods. It cannot be moved from one location to another, nor can it be directed from one use to another except within rather narrow limits, since its use is affected by climate as well as by specific crop requirements. Capital, in the form of tools and equipment, is much more flexible but becomes more rigid as specialized equipment is developed and adopted. Farm labor, except hired labor, is highly inflexible; that is, the farmer is not able to discharge his family labor force if a reduction in output appears desirable, nor can he, except within narrow limits, employ more labor if an increase in production appears profitable.

In industry both land and capital tend to be inflexible. This is the result of the nature of land and of the high degree of specialization in machines and tools. In most cases, machines and tools can be used only for the purpose for which they are intended. In this respect, their use is much more rigid than in farming. Nonagricultural sectors can adjust their output more quickly than can farming sectors because they have greater control over the quantity of labor employed—that is, the volume of labor can be changed from time to time by the simple device of hiring and firing. But nonagricultural labor is taking on the character of immobility, and the control over it, formerly enjoyed by industrial entrepreneurs, is disappearing with the growth of effective labor unions.

Distribution of the National Product

Not only must a nation allocate its resources, but it must also provide for the equitable distribution of its output. In a simple self-sufficing economy in which different sectors do not exist or, if they do exist, are not interdependent, the problem of intersector distribution of output does not arise. But in a highly specialized and integrated economy, made up of interdependent sectors using a common exchange system, this problem becomes one of the most important with which a nation has to deal. It is the fundamental problem in all discussions of "parity for agriculture." The use of this phrase means, or at least implies, that agriculture is not getting its share of the national output. Whether or not such a statement is correct, it is obvious that the distribution of the national income affects the interest of the farmer. If perchance agriculture is not getting its "fair" share, this may not be due to a conspiracy against agriculture but rather to its inability to adjust its output to the changes that are taking place in other sectors of the economy. Or, assuming that the agricultural resources have been allocated correctly, society as a whole, or in part, may be unable or unwilling to purchase farm products at prices that will provide farmers with a "fair" share of national income. In all such cases, society has the task of redistributing its total income according to some objective standard of equality.

Specific Problems

The economic problems arising within agriculture are of two kinds: (1) those that originate at the farm level, and (2) those that are sector-wide in importance.

The first set may be solved largely by the farmer himself acting alone or in cooperation with his immediate neighbors. Individual action, however, is not generally applicable to problems that are sector-wide in scope. It has been implied, however, and more often stated that sector-wide problems may be solved in the same manner and with the same techniques as are used in solving the problems at the farm level. Such a notion is erroneous and arises out of the imperfect assumption that what is desirable for the individual farmer is equally desirable for all farmers. The difference between the two situations may be made clear by a concrete illustration.

Farming is an industry made up of a large number of relatively small, highly competitive business units called "farms." Under such circumstances, a change in the use of resources and in the farming operations on any one farm does not affect materially either the total output or the market price of a specific product. This is the assumption upon which all work at the farm level is based. Suppose, however, that a change in the market price of a specific product appears desirable. The market price cannot be changed by individual farmers acting alone. When farmers have been asked to reduce output voluntarily in order to raise market price, invariably the result has been an increase in output and a lower price. If a higher price is to be realized, a different technique from voluntary reduction is necessary—a technique that will require farmers to enter an agreement to reduce production and will, at the same time, provide the machinery by which this agreement may be enforced.

Internal Problems

1. Production. Among the internal problems of agriculture those growing out of, or associated with, production have been given more attention than others. From the physical or technical side, emphasis has been placed upon greater production efficiency. For this purpose, experiments have been designed to test production response to varying quantities of inputs (for

example, to determine the output of milk per cow in response to varying quantities of feed consumed). In the main, the objective of production efficiency experiments has been to maximize physical output. Farmers, however, are not interested solely in getting larger outputs. On the contrary, they are primarily concerned in maximizing net returns. To assist farmers in attaining this objective, the economist has directed attention to the use of what may be called "farm management techniques," which consist of the adoption of recommended crop and livestock practices, the most effective methods and techniques for using labor and capital, and the selection and combination of farm enterprises.

The production problems also include those that are of sector-wide importance. Such problems are not associated so much with the use of the factors of production at the farm level as with the conservation of existing resources, or with the expansion of the farm land base. For example, the conservation of farm land, although it may and usually does start with the individual farm unit, to be most effective must include whole watersheds or what have been called "conservation districts." This is true also of reclamation and irrigation projects. Reclamation is concerned with the technical and the economic problems involved in the drainage or irrigation of large areas.

2. Marketing. The weakness of the farmer's position in the national economy is most in evidence in the marketing of his products. His continued inability to obtain "necessary" prices for his products has required governmental aid and protection by means of guaranteed minimum base prices on many farm products, accompanied in some cases by market and production quotas. A part of the farmer's pricing difficulties may be attributed to the way in which the marketing system is organized and operated. At least, this idea has been in the minds of those who have stressed the need for a more efficient marketing system in which the cost of marketing would be reduced materially and in which products would be priced according to the quality of the products under competitive bidding. Suggestions of this sort raise the question of who—the farmer or the consumer—is going to benefit from a more efficient market structure. It is this question that is stated or implied in all discussions of the division of the consumer's dollar between the farmer

and market middlemen. No doubt some of the farmer's price difficulties are also the result of his own carelessness in preparing his products for market and of his ignorance of the quality of the products and the type of pack consumers demand and for which they are willing and able to pay.

3. Farm financing. Farm financing in its various aspects has become one of the most significant problems of modern times. This is true because farm operations require the expenditure of funds beyond those normally available from the farmers' own savings.

Another reason why farm financing is important is that most loans are made on a "personal" rather than a "firm" basis. If farm loans could be made without the influence of the personal element, farmers might have access to relatively low commercial rates of interest. But since farming is a mixture of personal and business interests and is not purely a commercial enterprise, most farmers must borrow on a personal basis. On this level the rates are usually high, too high in many cases to permit a return on the funds borrowed that will cover the loan costs.

4. Farm insurance. Another set of problems emerges from the hazards or risks associated with farming. Although these risks have been identified and the resulting losses have been computed, farmers have not been able or willing to buy the needed protection. To supply this protection, of course, is the function of insurance. It is true that fire insurance is available, as well as insurance against losses due to natural causes, such as windstorm, hail, lightning, and floods; but, even so, because of the cost or for other reasons, farmers have not used insurance to the extent that has been estimated as desirable. To be sure, there are inherent difficulties in the situation. Unlike urban business, farms do not have the protection against fires that cities provide. Farmers tend to be slow to cooperate in obtaining insurance on a group basis, which would reduce its cost. Finally, farmers as a group are not apparently as alert to the benefits that insurance affords as are other businessmen.

In recent years some attempt has been made to provide types of insurance that are not available through established insurance companies. The Federal Government, for example, is experimenting with crop insurance to cover losses from natural causes, but, as yet, this type of insurance is limited to a few crops, such

as cotton, wheat, tobacco, and corn. Losses resulting from changes in market prices can be wholly or partially eliminated by a scheme of buying and selling "futures" or, as it is called, by "hedging the market." This method is seldom, if ever, available to farmers because of the relatively small quantity of products sold and because speculative markets, required for hedging, do not exist for many farm products. In part, losses due to price changes may be averted by the use of governmental loans, but such loans are not available for all crops and livestock products.

5. Farm land tenure. Because land has certain peculiar characteristics, such as immobility, society has found it necessary to limit the *rights* in its use. There are several claimants to these limited *rights*. Land tenure, therefore, is concerned with how these rights are distributed among private owners, occupiers who are not owners, and creditors in the event that land is encumbered. Society is also a claimant since it reserves to itself the right to tax, to take land for public use through the power of *eminent domain*, and to regulate its use by the exercise of the *police power*. The distribution and adjustment of these rights among and between individuals, such as owners, tenants, laborers, and managers, give rise to conflicts that are outward evidence that specific problems exist. These problems may be grouped under three classes: (1) landownership control, (2) size of land holding or size of the economic unit, and (3) tenancy.

The first set of problems emerges because land is limited in supply, immobile, and, to a large extent, irreplaceable. In these respects it differs markedly from labor and capital, both of which can be moved, replaced, and increased in quantity. There is an added motive for society to limit the rights in land. Population, a highly variable factor, tends to increase faster than the land base. Although the productivity of land has been increased by the use of more capital and labor, there is still a tendency for population to increase at a more rapid rate than the economic supply of land. Among other things, this means that land must be used effectively and must be protected from partial or total destruction.

In the second category—that is, the size of the economic unit —the interest is centered on landownership concentration. There is, too, the problem of regulating the size of farm unit

for the most efficient use of the factors of production, which will provide an income high enough to prevent, or tend to prevent, the necessity for exploiting the land. Because the size of such a unit will vary with physical and economic conditions, as well as with the capacity of the operator, the problem is obviously a difficult one.

Tenancy is a condition in which the rights and privileges to the use of land are divided between the owner and a second party, called the "tenant." The problems associated with tenancy are varied and complex. On the business side, they include the determination of the leasing arrangement for the operation of the farm, or any part of it, the determination of the rent to be paid and the manner of its payment, the living conditions of the tenant, the length or time period of the contract, and the provisions for the settlement of disputes that may arise between the landlord and the tenant.

Tenancy, however, is not solely a business arrangement. It is a social and economic institution and, as such, has far-reaching effects not only upon the use of the land but upon the economic and social status of both the tenant and the landlord. As an institution, it has been subjected to much criticism directed largely to the effects of tenancy on land use and on living standards of tenants as compared with landlords and landowners, the social and economic effects of absentee landlordism, and the effects of tenancy on education and life of the community.

6. Size and distribution of farm income. When farm products are sold, the income received must be distributed to all of the factors that have cooperated in their production. In not a few instances the income from the sale of products goes directly to farmers who have supplied the land, labor, capital, and management. In cases of this sort the problem of factor distribution of income does not arise. The farmer gets all of the income, large or small. But in all those cases in which various persons cooperate in supplying the factors of production it is not only the size but the distribution of the income that is important. Thus, when a hired workman supplies the labor, the question of the rate of wages must be settled. When tenants and croppers are used in production, it is the distribution of the crops or the income from their sale between the landlord and the tenant or the cropper that is of major importance.

External Problems

Agricultural economics is also concerned with economic conditions in the nonagricultural sectors of the economy and with governmental activities. Agriculture is a part of a closely integrated economic system, and the government in recent times has become a potent force affecting economic activity. The problems that are of peculiar interest to the agricultural economist in these spheres may be considered briefly under: (1) industrial activity, (2) national and international trade, (3) governmental policies and programs, and (4) taxation.

1. Industrial activity. The nonagricultural sectors employ about 86 per cent of the total working force of the United States. When the various segments of this vast industrial and commercial empire are operating at full capacity or at a high level, the wage-income of the working force is usually at a maximum. The ebb and flow of this wage-income over time is closely associated, but not perfectly correlated, with farmer prosperity; that is, as this wage-income changes in volume, farm income changes and in in the same direction. Perfect correlation or agreement does not prevail because farm products are largely made up of what are called "essential products," the consumption of which increases with rising income but not as rapidly as the income of industrial or nonagricultural groups rises. It is this relation between agricultural income and nonagricultural income that is the basis of such statements as: "If the national economic problem can be summed up in a single sentence, it can be said to be a problem of increasing industrial production in the United States to a point somewhere near our productive capacity. If that were done, not all farm problems, but many of the worst of them, would disappear."[4]

2. National and international trade in farm products. Since the farmer sells the bulk of his products on either domestic or foreign markets, the movement of such products through the channels of trade is of interest to the agricultural economist. In part, this is a marketing problem, but there are features that are of special interest to the agricultural economist, namely, trade barriers and restrictions. According to the Constitution, the several states are forbidden, except with the consent of Congress,

[4] U. S. D. A. *Yearbook*, 1940, "Farmers in a Changing World," p. 342.

to erect any barrier or in any way interfere with the interstate movement of goods, services, or people for the purpose of gaining special advantage over any other state or states (Sec. 10). In spite of this constitutional provision, however, most of the states have erected barriers that, taken collectively, restrict the free movement of goods and services among the states of the Union.

International trade is also subjected to numerous barriers and other devices intended to regulate the trade among the nations of the world. These devices, as in the case of the states, are designed not to facilitate trade but to gain some advantage for the nation that imposes such restrictions. Because the free movement of goods and of persons, with a few exceptions, is considered necessary to the best utilization of a nation's productive resources, the subject of interstate and international trade and the conditions under which it is permitted to take place are, therefore, an integral part of agricultural economics.

3. Policies and programs. A recognition of the problems of agriculture is usually followed or accompanied by the formulation of policies and action programs. Usually a policy is a statement of the beliefs and attitudes of specific groups, or individuals, with respect to the solution of a problem or a series of closely related problems that have been identified and described. A program, on the other hand, consists of a set of procedures by which or through which a policy is activated or put into effect.

A statement of policy may be accompanied by specific legislation. For example, the Agricultural Adjustment Act of 1934 was prefaced by this statement of policy:

> Sec. 2. It is hereby declared to be the policy of Congress . . .
> (1) To establish and maintain such balance between the production and consumption of agricultural commodities, and such marketing conditions therefor, as will reestablish prices to farmers at a level that will give agricultural commodities a purchasing power with respect to articles that farmers buy, equivalent to the purchasing power of agricultural commodities in the base period. . . .
> (2) To approach such equality of purchasing power by gradual correction of the present inequalities therein at as rapid a rate as is deemed feasible in view of the current consumptive demand in domestic and foreign markets.
> (3) To protect the consumers' interest by readjusting farm production at such level as will not increase the percentage of the consumers' retail expenditures for agricultural commodities, or products derived

therefrom, which is returned to the farmer, above the percentage which was returned to the farmer in the prewar period, August 1909–July 1914.[5]

A declaration of policy, however, is not always followed by a program designed to make the policy effective. Whether or not such action is taken depends upon the importance of the problem and the urgency for its solution. In seeking a solution for some agricultural problems, policies have been formulated and action programs have been provided. Even in the formative period of this nation, the Congress formulated policies regarding agriculture that were followed by action programs. For example, policies toward agricultural education and technical and economic research were formulated and accompanied by action programs. The nature of policies and programs that affect the economic status of agriculture has become of major importance and absorbs much of the time and energies of the agricultural economist.

4. Taxation. In the past, the chief function of taxation was to provide the revenues for the ordinary governmental activities, such as salaries and expenses for public officials and minimum public services. Today, however, the power to tax has been used to allocate resources and distribute income. Whereas some nations, notably Russia and England, have taken over direct control of resources and the distribution of income, the United States depends largely on our exchange system and the power of taxation to achieve these same ends. In this manner social and economic changes can be effected without resorting to painful and destructive processes of revolution. The power of taxation has been used, for example, to limit or to regulate such things as (1) the nature and size of the farm unit, (2) farm production, and (3) prices of farm products.

A few specific examples will assist the reader in obtaining a better grasp of how the power of taxation is used in modern times to effect changes in agriculture. In thirteen states taxation preferences are granted to "homesteads." Preferential treatment varies from outright exemption to lower tax rates on these homesteads. Insofar as taxes affect the situation, such treatment tends to favor the development of small (and usually noneconomic) units and to deter the growth of large commercial

[5] Public Law No. 10, Seventy-third Congress, H.R. 3835. Agricultural Adjustment Act, 1934.

units. Another example is found in the taxation of tobacco. In its attempt to regulate the production of flue-cured tobacco, the Federal government provides for a tax on all tobacco produced and sold over the official quota.

Conclusions

From the arguments presented in this chapter, it is possible to formulate a more comprehensive definition of agricultural economics. It is certainly an applied science because it is concerned with the solution of the economic problems of agriculture, but it is a science whose metes and bounds extend far beyond the field of agriculture. Within its scope must be included every phase of a nation's activities that in any way affect the farmer in his efforts to make a living. Farming is not an independent economic sector around which has been built an economic "Chinese wall," but it is a part of a vast and highly integrated system. This system is, to a large extent, automatically regulated by and through a common exchange system. But since this is true only in part, government must use its powers to assist this exchange system in its task of "properly" allocating its vast resources in the production of goods and services and to effect an equitable distribution of its output. The active rather than passive participation of government in regulating economic activities immediately brings within the scope of agricultural economics government policies and programs, not only those that are designed to affect the allocation and use of agricultural resources but those that may affect economic activities in other sectors of the economy. Agricultural economics, therefore, is an applied science, which includes within its domain the study of all those economic activities that impinge on or that affect the farmer in his efforts to make a living. At the farm level agricultural economics is concerned with developing ways and means by which each productive unit may be so organized and operated, its products so disposed of, and the resources so allocated to various uses that the farm may yield the maximum net returns. On the sector level it deals with those problems that emerge when farmers attempt to effect changes in farming that cannot be accomplished by individual action. Among such problems are the conservation of the land, the cooperative pur-

chase of goods and services, and the marketing of farm products. Finally, agricultural economics must be concerned with the solution of those problems that require the active participation of the government. In this area are the problems associated with production and price controls, supplying credit to farmers, regulation of interstate and international trade, and providing full employment to nonagricultural laborers. As Richard T. Ely says of economics, agricultural economics is indeed a science with "rich diversity and spacious amplitude."[6]

Questions

1. State the basic elements of any problem.
2. State briefly how the economic problems of the farmers arose.
3. Name the types of productive resources and state why their allocation is important.
4. What are the characteristics of the factors of production that affect their proper allocation?
5. Why should a nation be concerned with the distribution of its income?
6. Why is it that farmers find it difficult to change the volume and type of production with changes in demand?
7. Name the important categories according to which the farmers' economic problems may be classified.
8. What is meant by the statement "In agriculture economic problems are of two kinds, those that arise at the farm level and those that are sector-wide in character"?
9. List some of the economic problems that arise in production, marketing, finance, insurance, and land tenure.
10. What is the relation between the national income and the income of farmers?
11. What are the bases for the following statement: Measures to protect farming "are justified on grounds independent of peculiar importance of agriculture or farmers"?
12. In what ways may the power of taxation be used to effect the allocation of farm resources? Illustrate your answer.

References

Jesness, O. B., and others, *Agricultural Policy*, Part I, Chapters 1-3. Philadelphia: The Blakiston Company, 1949.

Journal of Farm Economics, Vol. XXIX, No. 4 (November, 1947), Part I, pp. 809-826.

[6] Richard T. Ely, *Outlines of Economics*, Chapter 1. New York: The Macmillan Company, 1915.

Samuelson, Paul A., *Economics*, Chapters II, III. New York: McGraw-Hill Book Company, Inc., 1945.

Tarshis, Lorie, *The Elements of Economics*, Chapter 1. Boston: Houghton Mifflin Company, 1947.

United States Department of Agriculture *Yearbook*, 1940, "Farmers in a Changing World," pp. 171-276.

CHAPTER 3

Our Economic System

THE SOLUTIONS of agricultural economic problems are conditioned or limited by our economic system. For example, considerable criticism has been leveled at the Federal adjustment program because large quantities of some farm products are not allowed to reach the consumer, although millions of people could afford to buy such products at less than the government support price.

This situation seems odd unless the nature of our economic system and how it operates is understood. Under our system, the government can dispose of some of these products to eleemosynary institutions at transportation cost, but no other economic group is entitled to such preferential treatment. To permit consumers to buy "surplus" products at less than the support price would be violating the rights of private enterprise. Such a situation presents a real dilemma. It is, or may be, desirable to maintain the price of farm products at a given level to protect the income of growers, but, since merchants who buy and sell these products are involved, their rights must also be considered.

Let us assume by way of illustration that the government support price for potatoes is $2.50 per 100 pounds. The retail merchant will be obligated to sell potatoes at this support price, plus cost of merchandising. It would not be permissible for a government agency to sell potatoes to any economic group that is a patron of such merchants. Hence, surplus potatoes, that is, the quantity that cannot be disposed of at the support price, must be given to eleemosynary institutions, sold to manufacturers of alcohol, stored, or allowed to rot in the field.

There are, therefore, at least three reasons why the student of agricultural economics should understand the nature of our economic system and how it operates: (1) to understand the specific nature of a problem and how it emerged, (2) to recognize the limits as set by our system to the solution of problems, and

(3) to appreciate the changes in our system that might be necessary to solve some of our most difficult problems.

The Economic System Defined and Described

The chief function of an economic system is to provide the means by which persons and agencies may cooperate to produce and distribute products and services. Hence an economic system comprehends all resources used in providing the material and nonmaterial wants of a group of persons, for example, a nation. The means, considered individually and collectively, must display characteristics by which the system may be identified and distinguished from all other economic systems.

There are a number of ways by which our economic system can be identified. First, it has certain broad characteristics, one of which is *acquisitiveness*. It may be said that our economic system is acquisitive, meaning that individuals are constantly striving to acquire wealth or power or both. It is not confined simply to those activities related to making a living, but it includes those activities that are associated with the accumulation of large fortunes or with the achievement of some other badge of distinction.

It is also possible to characterize our economic system on the basis of its *competitiveness*. Competition, in this sense, means that men or groups of persons, agencies, and corporations are permitted to vie with each other in the production and sale of commodities and in the rendering of services. It is true that this competition is said to be "perfect" or complete or, to use a somewhat more pungent word, "cutthroat." This type of competition is characteristic of farming where millions of persons compete with each other in the production and sale of farm commodities. On the other hand, there are areas of activity where monopolies reign supreme or where competition is eliminated. Between these two extremes are found areas in which imperfect competition exists.

The trend toward monopolistic conditions was recognized at an early date, and efforts were made to check their growth and to limit the power of monopolies. This is evidenced by the Sherman Anti-Trust Act of 1890, which provided:

> Sec. 3. Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce in any Territory

of the United States or the District of Columbia, or in restraint of trade or commerce between any such Territory and another, or between such Territory or Territories and any State or States or the District of Columbia, or with foreign nations, or between the District of Columbia and any State or States or foreign nations, is hereby declared illegal. . . .[1]

The Sherman Act was followed by the Clayton Act (1914), which exempted labor organizations from the provisions of the Sherman Act. The Federal Trade Commission Act (1914) was designed to police monopolies. The Webb Pomerene Act was passed in 1918 and exempted associations engaged exclusively in foreign trade. Some years later (1922) the Capper-Volstead Act, which defines the legal status of farmer-marketing cooperative associations and provides the procedure in the event that such cooperatives act in restraint of trade, was passed. This procedure in the Capper-Volstead Act is unique in legislation dealing with monopolies. According to this act

> . . . if the Secretary of Agriculture shall have reason to believe that any such association monopolizes or restrains trade in interstate or foreign commerce to such an extent that the price of any agricultural product is unduly enhanced by reason thereof, he shall serve upon such association a complaint stating his charge in that respect to which complaint shall be attached or contained therein a notice of hearing, specifying a day and place not less than 30 days after the service thereof, requiring the association to show cause why an order should not be made directing it to cease and desist from monopolization or restraint of trade.[2]

More recently labor unions have assumed monopolistic characteristics and the Taft-Hartley Act (1948) is designed to cope with this situation.

Another broad characteristic of our system is its *rationality*. This term implies that the system is operated by persons and agencies that are motivated by reason rather than emotion. Businessmen tend to base their actions on facts rather than on hunches or vague opinions. "What are the facts?" is the question that entrepreneurs ask before they decide on a course of action. They do not depend upon some oracle for advice but upon the persons who are in possession of facts, the "ex-

[1] For a discussion of this provision see Lewis A. Froman, *Principles of Economics*, p. 807. Chicago: Richard D. Irwin, Inc., 1946.

[2] Reprinted by permission from *Cooperation in Agriculture*, by H. C. Filley, p. 93. Published by John Wiley & Sons, Inc., 1929.

perts" as they are often called. This dependence of businessmen on facts is generally recognized. Richard Weil, Jr., writing in *The New York Times Magazine*, October 16, 1949, states:

Successful businessmen do not, in their own fields, ignore what their competitors are doing or shut their eyes to other peoples needs and desires. They keep well informed and they shape their policies in accordance with the facts. They take much trouble to get those facts.

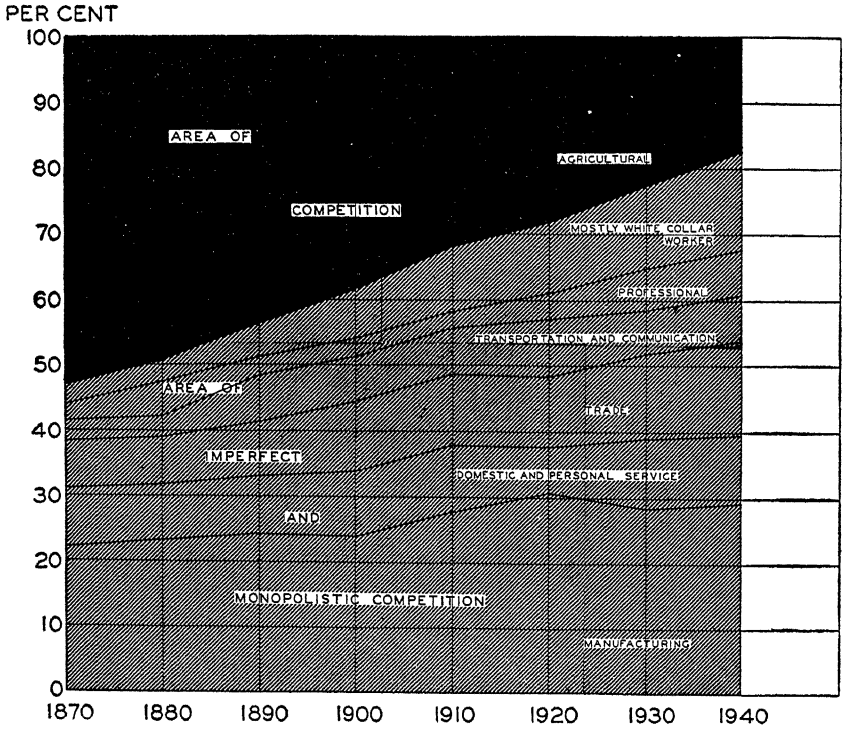

FIG. 1. PERCENTAGE DISTRIBUTION OF EMPLOYEES IN THE UNITED STATES, 1870-1940.

They inspect their own businesses, they watch rival companies, they read trade publications, they subscribe to business reports. . . . They go to great lengths to know what they are doing.

Fundamental Institutions[3]

Most, if not all, economic systems possess certain fundamental institutions by which they may be distinguished. A socio-

[3] Richard T. Ely, *Outlines of Economics*. New York: The Macmillan Company, 1915.

economic institution is any force that determines or affects the action of individuals. Marriage is called an institution because, through custom, tradition, and law, it prescribes the condition of cohabitation. It will not be possible to discuss all of the institutions of our society since they are almost innumerable. Attention will be directed to those that are of major significance.

1. Private property. When reference is made to the concept of private property, the general inference is that it means physical things, such as land, buildings, and other material objects. Actually, however, private property means the "exclusive" control over things by individuals. The control of property is always limited (not absolute), and under the law a person cannot willfully destroy property over which he has control. Nor can property be used to carry on any trade or practice that constitutes a public menace. The right held by the state to tax property or the income from property constitutes a limitation on the control of property.

2. Personal liberty. The rights conferred upon persons by society are also limited. There is no such thing as absolute personal liberty. It is restricted not only by law but also by custom and tradition. Under the feudal system the individual's rights or freedoms were very few in number and were restricted in range. Persons were tied to the land; and, even when this was not the case, the movement from one class to another was almost impossible. In our society, however, this is not true. Persons are what is called "free." They may move from one place to another without the consent of authority (except in a few cases; for instance, when they may be dangerous carriers of disease or when they wish to visit a foreign country), or they may move from one class to another. Indeed, class distinctions are not recognized by law. Such distinctions as exist are the result of custom and tradition. Not only is it permissible for a person to move from place to place and from one class to another, but freedom is extended to the expression of ideas and beliefs. There is, to be sure, some restriction on the freedom of speech or expression, but within wide limits a person may say or express whatever he thinks.

3. Freedom of enterprise. Another freedom of great significance, which is enjoyed by citizens of our economic order, is the right of a person to choose the type of business or occupation

he wishes to pursue. One also has the right to change from one business or occupation to another. This freedom, as are all freedoms, is limited. Freedom is granted only if the individual meets certain requirements. It is not always possible to enter any business and operate it as the individual may deem advisable. The state prescribes conditions as to the training of the individual and as to the mode of operating his business or of carrying on his profession. For example, a person who wishes to practice law or medicine or to teach in a public institution must have specific training, which is prescribed by law. Neither is a person permitted to conduct a business (except farming) without a license. In these and other ways freedom is limited; it is never absolute. Neither does freedom of enterprise mean that a person can enter any business or occupation even if he may be qualified to do so. In our society, the difficulty of doing so may be insurmountable. For example, some economic activities are conducted on such a large scale that about the only way a person can participate is as a paid employee. The right of entrepreneurship, in many cases, cannot be exercised or enjoyed.

4. Freedom of contract. This freedom is one of great importance to the individual in our society. It supplements and limits the other freedoms. It would be quite useless to have the freedom to choose an occupation or business and be denied the right to make contracts, which are so essential to the conduct of a business or a profession. The freedom of contract means that any responsible individual may enter into an agreement with some other person or agency to perform a certain service, or by which certain rights are acquired or transferred. Contracts, when legally made, are enforceable by the courts; no one can break a contract without cause.

5. Inheritance. To encourage economic action among individuals our society provides for the transmission, to descendants at death, of wealth or rights to wealth. This right to inherit wealth is limited. To prevent the concentration of power, which usually accompanies wealth, the state takes for its own use a portion, often a large portion, of any inheritance. In this fashion the state redistributes wealth, or more properly the income from wealth, to those who perhaps had little or no part in its accumulation. But this action on the part of the state is

essentially a method of maintaining a democracy. If there were no limits placed upon inheritance—that is, if inheritance were absolute—a few persons or families would in time control the state. Under such a condition our democracy would disappear and a plutocracy might, indeed would, become a fact.

6. Vested interests. Another important institution is vested interests, by means of which persons are given the right to use and enjoy the income that may be derived from such things as inventions, paintings, and books. Vested interests are usually secured by patent rights, which give the processor the sole right to the income derived from such patents. Here, again, the rights are limited to a definite period of time. It is impossible to obtain a patent right in perpetuity.

Economic Classes

Although our society does not recognize social classes except as they are the product of custom and tradition, there exist certain economic classes that are easily recognized as laborers, capitalists, entrepreneurs, and landlords. The first three of these are the product of our industrial society; the fourth, the landlord, is a carryover from feudalism.

1. Laborers. The greater part of our society is composed of individuals who gain their living either through physical or mental effort. The common characteristic of this class is that they receive wages or salaries as a reward for their contribution to production or for the personal or professional service that they perform.

2. Capitalists. For the production of goods or services much more than labor is required. Capital, one of the most important of these other factors of production, may be defined as those intermediate goods, such as tools, machinery, and materials of all sorts, that are essential to production. This form of wealth is created in a number of ways, one of which is the foregoing of consumption. If products were consumed as rapidly as they are produced, capital formation would be retarded or could not take place. But saving is not the only method by which capital can be created. Its formation is dependent to no small extent upon the advancement of science and invention. Both of these factors either increase the actual amount of capital availa-

ble or increase its productive power. In this way, more production can be used for consumption purposes and for creation of additional capital.

But who are the capitalists? Actually the capitalists are those who forego consumption and thus provide a fund out of which capital goods can be created. A capitalist, therefore, may be any person who saves a part of his income so that it may be invested or used in productive processes. A large part of our capital accumulation, however, is the result of policies of large corporations, which, instead of paying out all income in dividends, salaries, and wages, divert a part of this income into producing new and better machines and equipment or in other ways increase the efficiency of their establishments. A reward must be offered for the diversion of production from use to the creation of capital, by either individuals, governments, or corporations; this reward is commonly called "interest." This interest is the reward paid to capitalists in much the same sense that wages are paid to the laborer.

3. Entrepreneurs. Production is possible only when land, labor, and capital are combined. The task of combining these factors is undertaken by a person called the "entrepreneur." For this service he, too, must receive a reward, called "profits." It is obvious that in the modern industrial world the entrepreneur must take some risk. This risk emerges because of the period that must, of necessity, elapse from the time land, labor, and capital are organized and combined until the product is ready for sale. During this period several things may occur. The price of the product may decline, or production costs may advance even if the price of the product remains the same. These changes involve risk that the entrepreneur must assume and for which he receives a profit if his judgment has been correct and if the skill that he employs has been above average. If these conditions are not fulfilled, the entrepreneur suffers a loss.

With the emergence of large, noncompetitive business units, entrepreneurship has had to assume an additional function, namely, to direct business so as to serve both public and private interests. Since these two interests are not always compatible, management has a difficult task to perform. Such functions must be assumed, however, if drastic governmental regulation and control, or even government ownership, is to be avoided.

4. Landlords. A landlord is a person or agency that controls the use of land and collects from this use an income called "rent."[4] The landlord stands in a unique position among the economic classes of our society. Whereas any increase or decrease in the reward to labor, capital, or entrepreneurship can be, and usually is, followed by a change in these factors, an increase or decrease in rent does not mean that more or less land can or will be made available. In short, land has no supply price.[5] For this reason, whereas land is a necessary factor of production, the increase in production is due largely, if not solely, to the increase in labor and capital.

The landlord's contribution to modern society is much less than that of labor and capital. This fact has led to many suggestions designed to abolish rents. One method by which this can be done, and indeed is being done, is the absorption of the net rent by taxation. Another method is the nationalization of the land, whereby the state becomes the landlord and any rents received are used as revenues for the benefit of all the people. But these devices are not popular in our society, and the landlord remains, even if he is unique.

Production Units and Processes

It has been pointed out that one of the functions of an economic system is production or, as the economists say, "the creation of utilities." Modern production processes have certain characteristics that are distinctive from anything that has occurred in any previous economic system. Their chief characteristics will be described briefly.

1. Corporate entities. With the exception of farming and the so-called "neighborhood industries," production and the production processes are carried on by corporations. These entities are created by law and are separate from the individuals who own and operate them. One of their many distinctive characteristics is the separation of the ownership from the management. The owners, who are the stockholders, do not operate

[4] In this discussion "land" refers to the products of nature. In the popular sense a landlord is an owner not only of land but also of the buildings on the land. To the extent that he gets income because of the buildings he is a capitalist or an entrepreneur, not a landlord.

[5] This statement applies to land in general. Land, as well as other factors of production, has a supply price for specific uses.

the business directly and in some instances not even indirectly. The function of operation is performed by a hired manager who is responsible, not to the owners, but to a board of directors.

The separation of these functions has at least one outstanding advantage. It makes possible the employment of efficient managers. If the owners, as in the case of farming, should direct the business, it would be difficult, if not impossible, for them to be discharged in case they were inefficient. But since the board of directors, and not the stockholders, are responsible for the operation of the business, the managers can be discharged if they do not perform efficiently. The power to do this accounts, in no small degree, for the high efficiency of modern industry. This freedom of action, although it may be necessary to obtain maximum efficiency of the individual firm, cannot be construed to mean that it will result in the most efficient use of the nation's resources. To reach such a conclusion, it would be necessary to identify the interest of the firm with that of society. But, as already pointed out concerning individuals, this is an unwarranted identification. For example, it may be to the best interest of a firm to discharge all or a part of its employees. If this action were taken by enough firms, the result would be large-scale unemployment, and unemployment, even on a small scale, is not to the best interest of society.

2. Division of labor. The efficiency of modern industry is dependent also on the division of labor. This means that the productive process is divided into a large number of interdependent operations. To each of these operations a laborer is assigned. This laborer, by previous training or experience or both, becomes much more proficient than if he had to perform a number of separate operations. In this manner, the output of a plant can be greatly increased and the cost per unit of output reduced. One of the marvels of modern industry is its ability to produce large quantities of uniform products so cheaply that they may be enjoyed by millions of consumers.

3. Use of machinery. A distinctive characteristic of modern industry is the lavish use that is made of power-driven machinery. The use of this form of capital is made possible as a result of savings or of foregoing consumption and also as a result of the diversion by corporations of a large part of their earnings into the purchase of machines. Not only are machines used to a

large extent, but, as in the case of labor, there is a *division of machines*. As a rule, each machine is designed to perform one task or to make one unit of a long series of interdependent units needed to produce the final product. By the use of machines in this fashion, labor is made more productive or is able to produce a larger product than would be the case if only simple hand tools were employed.

4. Specialization in production. Greater efficiency in the productive process is often obtained when a corporation devotes itself to the production of a single product. As a rule, specialization in production permits the development of both the division of labor and the division of machines to the fullest extent. It seldom, if ever, happens that any firm is completely specialized. As a rule, some diversification is practiced. The production of supplementary and complementary products provides ways of using more completely the resources of the firm.

5. Concentration and control of production. In our modern society, production is under the control of a relatively few large establishments. It is true that there are a large number of individual firms, but many of them are relatively unimportant insofar as the volume of output is concerned. The automotive industry is a good example of concentration. In this case, a few firms produce almost all of the automobiles and trucks.

6. Organization and management of industry. A feature of great significance is the manner in which large establishments are organized. Most firms consist of a large number of interdependent departments, each with its own function, but all contributing to the production of the final product. The uniting of these departments into a smoothly operating business is the function of management. If this task is done well, and in most cases it is, then there is a unity of all effort, and this unity finds expression in the smooth and continuous operation of the firm.

One of the most modern of all organizational devices is what is called the "assembly line." This is a device by which a product, made up of or composed of various parts, is put together or assembled as a continuous operation. The creation of such a product starts at one end of the assembly line and comes off a finished product. Not only has this method provided the means of producing large quantities of product, but it has also reduced the cost of production. It is now possible to obtain

cheaply products that formerly were not available or were available only at high prices.

Exchange System and Distribution of Wealth and Income

To facilitate the sale and purchase of industrial products and of personal services, an exchange system of great magnitude has been created. This vast "empire," as it is sometimes called, is composed of a large number of closely associated or independent units, whose function is to provide ways and means of exchanging commodities and services. There are innumerable market places where exchanges take place. These exchanges are mostly for cash, although a form of barter is often used. For example, wheat may be sold for cash, or contracts for the delivery of a stipulated amount of wheat may be bought and sold. There are labor centers where the services of labor can be obtained for a stipulated wage. Professional services are also obtainable for what are called "fees," or for the payment of salaries.

This exchange organization is essential for a reason other than that of providing for the sale and purchase of goods and services. In our society, the sale of goods or services is necessary for obtaining the money (or credit) by which the use of the factors of production can be paid for or rewarded. The industrialist, for example, must sell the products of his firm if wages are to be paid, dividends distributed, and profits retained by the entrepreneur. This method of distributing income (and also wealth) places the entrepreneur in a strategic position. The entrepreneur is in a position to determine, to some extent at least, what wages should be paid, how much of the earnings should be paid as dividends, and, if he is the owner of the plant, how much should be distributed as rent. It thus happens that more money is paid to some of the factors than they actually deserve, based upon their contributions to the production of the final product. If such an inequitable distribution continues over any long period of time, there occurs a marked maldistribution of wealth and income.

Economic Philosophies

An economic system may be identified also by the economic philosophy that determines not only its institutions and its organization but also its policies and programs of action. When

western nations emerged from feudalism, they used the power of the state to regulate and control economic activity. This procedure, however, was greatly modified after the publication of *Wealth of Nations* by Adam Smith in 1776. Governments, influenced by Smith's theories, generally adopted a policy known today as *laissez faire*, under which individuals have the right to engage in economic activities with a minimum of governmental interference. Although this policy has never been adopted in toto by any nation, it has had a profound influence on the attitude of governments toward the regulation of economic activities. And, in our economy today, controversy rages over the extent to which laissez faire as a doctrine should be maintained.[6]

Elements in Laissez-Faire Doctrine

It must be stated that laissez faire is not a series of governmental rules or acts but a doctrine of control over economic actions from which acts, rules, and attitudes emerge. As a doctrine laissez faire comprises a number of basic tenets, the more important of which are: the existence of economic freedom and of perfect competition, the assumption of a hedonistic instinct possessed by all normal persons, which automatically directs each individual to do those things that will yield personal satisfaction, and the principle that price is the basic, if not the sole, regulator of all economic activities.

1. Economic freedom. The central core of laissez faire is economic freedom. It is held that in a free society economic units (individuals and firms) compete for the use of productive resources. This being true, it follows that the best allocation and use of resources will be achieved to the extent that economic freedom is permitted and encouraged. According to this assumption, a major function of government is to maintain and encourage, rather than to eliminate or condition, economic freedom.

2. Perfect competition. The realization of economic freedom, however, requires that perfect competition must prevail. The first requirement of perfect competition is that all competing units must be so small that the action of any one unit will not

[6] It should be pointed out that Smith never recommended laissez faire as the sole means of regulating society.

affect the market price of the things bought or sold. To the extent to which monopolies exist the validity of this major assumption is impaired, since the actions of large or even small monopolistic firms do affect price. Hence, according to laissez faire, it should be the function of government to prevent the growth of monopolies.

Another condition of perfect competition, stated or implied, is that all buyers and sellers must have an equal knowledge of supply and demand conditions. In the event that such knowledge does not exist, perfect competition does not exist. For example, under conditions of incomplete knowledge, too many pairs of shoes might be produced—that is, more resources would be allocated to the production of shoes than were actually needed. Therefore, one of the legitimate functions of government is to make available all pertinent information on demand and supply so that buyers and sellers may act in a rational manner.

3. Hedonistic actions. Laissez faire also implies that persons possess the power to know what is to their best interest, and, if given individual and economic freedom, they will act accordingly. Thus, the consumer knows the number and kind of goods and services that will yield the maximum pleasure. Since each person is thus endowed and free to act according to his own self-interest, it follows that the sum total of personal actions will coincide with the best interest of society as a whole. To permit this power to act freely, governments should support individual or personal freedom.

4. Market prices. If perfect competition exists, market prices will regulate both the allocation and use of resources. According to this thesis, no individual is going to pay more for a resource than it is worth, and competition will be such that no person will be permitted to buy a thing for less than it is worth. In this manner—that is, through the interplay of bids and counter bids —demand and supply will be equalized at the market price. This condition results from the fact that, under perfect competition, any person who misuses a resource will not be able to retain its use. In the event that it is consumed in the process of production or is destroyed, the individual will be unable to acquire more because the more efficient users will outbid the less efficient. By this procedure any entrepreneur who wishes to obtain the use of a resource, at all times, must operate his business at maximum

efficiency, or at least at an efficiency that will permit him to compete successfully for needed resources. In the event that an entrepreneur misuses his resources, his returns will not be sufficient for him to continue in business. This being the case, under laissez faire it is a function of government to study the causes of inefficiency in production, to suggest how they might be eliminated, and to encourage the adoption of efficient methods.

Major Defects of Laissez Faire

Laissez faire as a national policy is admittedly imperfect. No nation has ever endowed its citizens with absolute personal or economic freedom. To do so would be to create a state of anarchy. Freedom, in whatever form, has always been limited but has seldom, if ever, been clearly defined. The limitations are embodied in such statements as "consistent with the interest of the state," or "consistent with the general welfare." This elasticity of expression is advisable since it gives the state the power to modify personal and economic freedom from time to time as conditions may determine. In times of peace, for example, individuals are accorded more freedom than in times of armed conflict. If personal freedom were absolute, rather than limited, a citizen could refuse to take any part in military activities. But since freedom is limited, a state can require its citizens to serve with the armed forces.

Laissez faire is defective also in that it identifies the interest of the individual with the interest of the state. There are numerous instances in which these interests conflict or are not identical. The individual's aversion to taxes is well known, yet it is to the interest of the state to collect taxes for the support of such services as education, fire protection, protection against invasion by a military force, and the preservation of law and order.

The requirement of laissez faire that society be atomistic, or composed of small competing units, is impossible of attainment, certainly in the modern world. There are many goods and services that citizens now enjoy that are the result of monopolistic units. This is so because a good or service would be so costly under perfect competition as to be prohibitive. An example of this is the telephone service. Under monopolistic control this service has been widely extended at a cost that can be

paid by a large and ever-growing percentage of our population. Since the construction of an automobile requires mass-production techniques and high initial costs that lead directly to monopoly or imperfect competition, it is difficult to conceive of the modern automobile as being the product of small highly competing units.

It thus happens that the economies of most advanced nations are characterized by large monopolistic units rather than by small competing units. There are, it is true, some economic sectors that are atomistic or appear to be so. Agriculture is such a sector. But even farming in modern times has become, in part at least, monopolistic. This is evidenced by the growth of farmer cooperatives, which often exert a powerful influence on the price of farm products and also on the price of the things farmers buy. So-called neighborhood industries have the appearance of highly competitive units. But this is more apparent than real. Service stations, neighborhood drugstores, and grocery stores are often organized and operated as small units. Not infrequently, however, the policies, especially price policies of such stores, are controlled by large corporations, which supply these units with products or services.[7]

Among the basic tenets of laissez faire none is more attractive and at the same time more deceptive than the hedonistic element. The doctrine that individuals possess an innate power by which they can determine what is economically good or bad encounters some stubborn facts. It may be granted, with some reservations, that each individual seeks his own self-interest, but the statement or inference that an individual is in a position to determine this interest under all conditions is of doubtful validity. Even in a very simple society individuals have to resort to the method of "trial and error" to determine which foods are edible and which are not. In a complex society the individual, in many cases, has to depend upon what the label says. To make the label state the truth requires the intervention of the government. In short, the individual has no protection, except that imposed by government, against the unscrupulous economic "wolves," which operate in a free society even in spite of laws and regulations to the contrary.

[7] See the recent ruling of the Supreme Court in the United States vs. Standard Oil Company of California. *The New York Times*, June 14, 1949, p. 1.

Under laissez faire the burden placed upon market price is excessive and unwarranted. It is assumed, as already stated, that price is the major regulator of all economic activity. It takes the place of the state as an allocator of resources and determines the rate of efficiency of resource use. In addition to this function, price is depended upon to allocate products and services after they are made available, to determine the amount of the total national income that is appropriate to each sector of an economy, and to distribute the income to individuals within each sector.[8]

There are several reasons why price alone cannot be used for any one or all of these purposes. And it is the inadequacy of price as an over-all regulator of economic activities that makes the interposition of the state necessary. It is assumed that a change in price will indicate the direction in which resources should be used and also the extent of their use. But this assumption is defective. It would be true only if the resources were perfectly liquid—that is, they could be moved from place to place or from one use to another. But this is seldom, if ever, true. Land certainly cannot be moved nor is it always easy to change the direction of its use in place. To a large extent the absence of mobility applies to capital goods, most assuredly to highly specialized machines and equipment. These blocks of capital must be used for the purpose for which they were constructed or not at all. Labor is more mobile than any of the other factors of production. But even so, it cannot be made to respond quickly to changes in wages. Labor is specialized, as are most factors of production. Laborers are trained and educated to do specific tasks, and they establish residences or roots that are not easily abandoned. For these and other reasons labor resists reallocation.

There is another reason why price, as an over-all regulator, is defective. There is no sensitive resource market. The price of a resource is derived from the prices paid for consumer goods and services. Since the effect of consumer prices may be delayed, the reallocation of resources to new uses may be delayed, and usually is, until serious maladjustments in production may occur. In short, there is an imperfect connection between the

[8] Theodore W. Schultz, "The Economic Stability of American Agriculture," *Journal of Farm Economics*, Vol XXIX (November, 1947), pp. 809-826

response of the users of resources and the response of the consumers of finished goods and services. Or, as one authority has suggested in speaking of the inadequacy of prices as regulator of farm production, "there has been a breaking apart of the network of prices connecting the decisions to utilize resources for production and the decisions to utilize products for consumption." [9]

From this statement of the philosophy of laissez faire, it must not be concluded that direct governmental action, as provided under socialism or communism, is suggested or advocated as an effective alternative. Any economic philosophy is defective, and this applies equally as well to socialism and communism as to laissez faire. The statement is made to indicate the nature and limitation of laissez faire as an economic philosophy under modern economic conditions. Obviously, direct governmental action is needed to provide a solution of many problems, but certainly not all problems are in this category. Hence, it is not necessary to abandon laissez faire as a policy, but those instances in which it is ineffective should be clearly recognized so that adequate action may be taken.

Questions

1. Why should students of agricultural economics have a knowledge of our economic system?
2. How would you define an economic system?
3. What are some of the chief characteristics of our economic system?
4. Define an institution. Name those institutions that are of great economic importance.
5. Why are most of the rights and privileges of individuals limited rather than absolute?
6. What is meant by an economic class? Name and indicate the chief functions of each economic class.
7. Name some of the characteristics of large-scale production units.
8. What is the specific nature of a corporation, and what are some of the advantages as compared to small private business units?
9. Describe our exchange system and tell how it operates.
10. Essentially, what is the economic philosophy that governs our society?
11. What is the major tenet of the doctrine of laissez faire?
12. Under laissez faire, what limit is placed on governmental activities?
13. What are the major defects of the laissez-faire doctrine?

[9] *Ibid.*, p. 818.

References

Blodgett, Ralph H., *Principles of Economics*, Chapters III and IV. New York: Rinehart & Company, 1946

Ely, Richard T., *Outlines of Economics*, Chapter II New York: The Macmillan Company, 1915.

Samuelson, Paul A , *Economics*, Chapter 3. New York: McGraw-Hill Book Company, Inc., 1948.

Tarshis, Lorie, *The Elements of Economics*, Chapter 46. Boston: Houghton-Mifflin Company, 1947.

CHAPTER 4

Elementary Price Concepts

THE SELF-SUFFICIENT farming of one hundred years ago presented few, if indeed any, serious economic problems. Those problems that arose had to do mainly with the physical, chemical, or biological side of farming, rather than with the economic aspects. As soon as the self-sufficient phase of farming began to disappear, the farmer was faced not only with new technical problems but with economic problems as well Under the old self-sufficient system, the farmer produced for a known market, but, under the new commercial system, he produces for an "expected" market.[1] And this expected market does not always prove satisfactory. For one thing, wide differences in prices occur. The causes of these differences are not easily understood even by the trained economist; and, to the farmer, they are especially troublesome.

The usual explanation of price changes is that they are caused by the action of economic forces. Although this is substantially correct, it is not enlightening. What is needed is a rational explanation of how these economic forces affect price changes.

Economic Terms

1. Economic forces. The economist, in explaining market phenomena, uses constantly such terms as economic forces, wants, utility, goods, demand and supply, value, and prices. What do these mean? A physical force is defined as any action between bodies that changes or tends to change their relative position. In the case of economics it should be remembered that human relations are involved. That is, economics has to do with those phenomena that are associated with man's activities in making a living. An economic force is, therefore, any influence that tends to affect the behavior of human beings in

[1] See H. E. Erdman, *American Produce Market*, Chapter 1. Boston: D. C. Heath & Co , 1928.

their effort to earn a living or to satisfy their wants. Hence this force affects the value and price of economic goods.

The chain of causation runs something like this: Suppose that certain goods made from rayon become very popular, and that the sudden increase in demand cannot be met immediately by an increase in rayon goods. As the quantity thus available is limited, rayon goods advance in price, but the force thus developed affects other things as well. It may affect the price of other textile goods that are used much in the same way as rayon goods are used. That is, these other textile goods will fall in price if there is a diminution in demand for them. Nor does the effect end there. It may extend to the raw products out of which rayon and these other goods are made. An increase in demand for rayon goods will cause the makers of these goods to buy more of the raw materials necessary to make rayon, thus tending to raise the price of these materials. Thus economic forces may not only affect the price of a specific economic good directly but may also affect the prices of many other goods remotely associated with the specific good in question.

2. Wants and utility; free and economic goods. Everyone is familiar with the fact that each individual has a desire for a great many things, or, in the words of the economists, each person has certain *wants* that must be satisfied. The attempt to satisfy these wants gives rise to economic activity and sets into motion economic forces. Even with the utmost activity, however, all wants cannot be completely satiated for the simple reason that wants are unlimited, whereas goods and services are, as a rule, limited.[2] It thus happens that goods and services command a price. It follows that to command a price a good or service (1) must have the power to satisfy a want and (2) must be limited. When goods are limited, they are designated as *economic goods;* and, if unlimited, such as sunshine, they are called *free goods.*

The demand for goods and services can be explained by the use of what is called "the diminishing utility concept." Utility is the power of a good or service to satisfy a want. This power

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[2] This discussion is not intended to convey the idea that a specific want is not capable of being satiated. It is the general opinion of economists that wants in general are not capable of being completely satisfied if among wants is included a desire for leisure

of a good may arise in several ways: (1) If a good satisfies wants because of the elements present in the good, the utility is designated as *elementary utility*. For example, firewood possesses this form of utility because the elements present in the wood, when they are combined with the oxygen in the air, give off heat. The heat, a form of energy, may be used to satisfy wants directly or indirectly—directly when, for example, one stands beside the fireplace and enjoys the heat or admires the flames and light; indirectly when the heat is used for the preparation of foods. (2) A good may possess utility because of its form. If so, it is called *form utility*. The goods that possess utility because of form are innumerable. All manufactured goods possess form utility. In fact, the object of manufacturing is to change the form of goods so that they will be useful and satisfy more readily our wants. (3) Changes in place may add utility to a good. It may happen that even when a good has potential utility because of its elements or form, it may not be useful because it is not in the right place. A utility that a good possesses because of its position is called *place utility*. (4) Because we cannot consume all the goods we need at one time, it is necessary to hold goods in reserve. The holding or storing, therefore, makes goods more useful. Hence, *time* may add utility to a good. If so, the utility added is called *time utility*.

3. Price, value, and money. Although these are words often used, their exact meaning is not always understood. When reference is made to *price* in an economic sense, it means the *exchange value* of a good expressed in money. Or price may be defined as the power of a good to command money.[3] Money is the medium by which the exchange of goods is facilitated. Thus in the United States and Canada the price of goods is expressed in dollars; in England, in pound sterling; in France, in francs. Each country, as a rule, has its own medium of exchange. But in any case the price of goods is usually quoted or expressed in the country's medium of exchange and not in terms of other goods. We do not say that a pair of shoes will exchange for 5 bushels of wheat, or that an automobile will exchange for 5 bales of cotton. To do so would be too cumbersome. On the contrary, we express prices in dollars. We say that the price of

[3] Ralph H. Blodgett, *Principles of Economics*, p. 198. New York: Rinehart & Company, 1946.

shoes is $10, that the price of an automobile is $1,500. In short, the medium of exchange becomes a common language in which all prices are quoted.

Value and price are closely related, yet they are different. Price is a unit concept. It expresses the value in the medium of exchange of a given unit of a good at a given time. On the other hand, *the value of a good is expressed in terms of other goods* and not in money. The value of a good may be defined as *its exchange ability in terms of other goods.* At any given time, the value and price of a good may be the same. Over a period of time this is not apt to be true, because the value of money, as money, may, and usually does, change from time to time. Thus, in our shoe and automobile illustrations the prices might change from, say, 1944 to 1950. But these goods might have the same power to buy other goods in 1950 as they did in 1944. It should not be understood from what has been said that a good has an unvarying or intrinsic value. The value of a good, that is, its power of exchange, will vary over a time span. Such variation is caused by changes in supply and demand conditions. Suppose that more cotton was produced in 1950 than in 1944, and that there was no change in either the demand for cotton or in the supply and demand for automobiles. Under such a situation the value of cotton in terms of automobiles would certainly change from what it was in 1944. More bales of cotton would have to be exchanged for automobiles. On the other hand, cotton in terms of other goods might have a higher exchange value. Thus the value of a good may, and usually does, vary with the supply and demand conditions.

4. Market. There are many ways to define a market. It has been defined as a *place where goods are bought and sold.* Thus we often refer to a place where meats are sold as a "meat market." Again, a market may be defined as an area and not a specific place. One often hears the expression, the local, regional, or world market. From an economic point of view, a market is a *sphere in which the forces affecting demand and supply have an opportunity to register their effect on prices.*

Demand

1. Law of diminishing utility. The utility of a good is not absolute or fixed but is dependent upon the number of units con-

sumed through a given time. As the number of units of any good of uniform quality consumed through a given time increases, the utility of each unit decreases. For example, if a person should consume successive dishes of ice cream, the first dish would yield probably the greatest satisfaction. The second would yield less than the first and the third less than the second. If consumption is continued long enough, the utility of the last dish of ice cream would disappear—that is, a consumption of a particular good may be pushed to the point of disutility. (See Figure 2.)

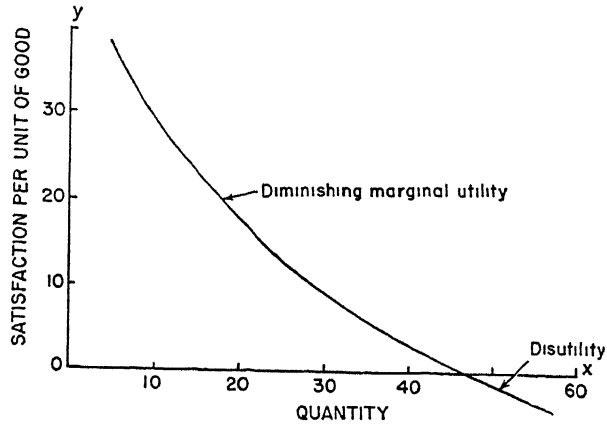

FIG. 2. AS A QUANTITY OF A UNIFORM GOOD IS CONSUMED AT A GIVEN TIME, ITS MARGINAL UTILITY DECREASES.

The tendency of a good to yield less and less utility per unit as the units consumed through a given time increase may be stated in the form of a law or principle as follows: *The total utility of a thing to anyone increases with every increase in his stock, but not as fast as the stock increases.*[4] Evidently, if the total utility does not increase as fast as the units of stock increase, the utility per unit must decrease with each addition to the stock. Under these conditions it is equally obvious that a person will not be as willing or as anxious to buy additional units as the satisfaction derived from each additional unit decreases, but he will seek to purchase units of other goods that will give greater satisfaction. That is, the last dollar or dime spent on food, clothing, and

[4] Alfred Marshall, *Principles of Economics*, p. 93. New York: The Macmillan Co., 1910.

recreation will give, through a given time, about the same utility as any other dollar or dime spent during the same period.[5]

2. The statement of the law of demand. From the foregoing statement the student will no doubt be able to comprehend the connection between the law of diminishing utility and demand. As the quantity of a good of a uniform character increases, the marginal utility decreases; and, therefore, the price that will be offered for it will tend to decline, or, if the price increases, less of the good will be purchased. Hence, it follows that to determine the *demand* for any good it is necessary to know the *quantities* that will be purchased at all possible prices.[6] Such a statement of quantities with their respective prices constitutes what is called the *demand schedule*. This schedule, it should be emphasized, is constructed from data extending through a given period of *time* and indicates the buyer's reaction to supply conditions through such a period.[7]

Probably enough has been said, although the subject has been by no means exhausted, to formulate a law concerning demand. This law may be stated as follows: *Through a given time in a given market as the price declines the quantity of a good demanded increases.*[8] (See Figure 3.)

3. Change in demand. A change in demand is not indicated solely by either a change in the quantity demanded or a change in price, although such is often thought to be the case. For example, it is sometimes said that a decline in the quantity purchased is indicative of a decline in demand and an increase in the quantity purchased is proof of an increase in demand. Again, it is sometimes said that a rise in price is indicative of an increase in demand and a fall in price is indicative of a decline in demand. The fact is that quantity purchased or price taken alone indicates nothing at all regarding change in demand. It is only when the two are associated that something positive may be said regarding changes in the demand for a good. *An increase in demand can be said to take place over a period of time only*

[5] Economists refer to this as "scales of preferences" and derive the demand curve from a series of indifference curves See Albert L Meyers, *Elements of Modern Economics*, Rev. Ed., pp. 77-91. New York: Prentice-Hall, Inc., 1948.

[6] F. R. Fairchild, E. S. Furniss, and N S Buck, *Elementary Economics*, Vol. 1, p. 259. New York: The Macmillan Co., 1926.

[7] The demand, as well as supply, schedules are fictitious. The only fact is the actual market price.

[8] See Alfred Marshall, *op. cit.*, III, Chapter III.

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when (1) the quantity purchased increases at the same price or (2) the quantity purchased remains the same at a higher price. On the other hand, a decline in demand occurs when (1) a smaller

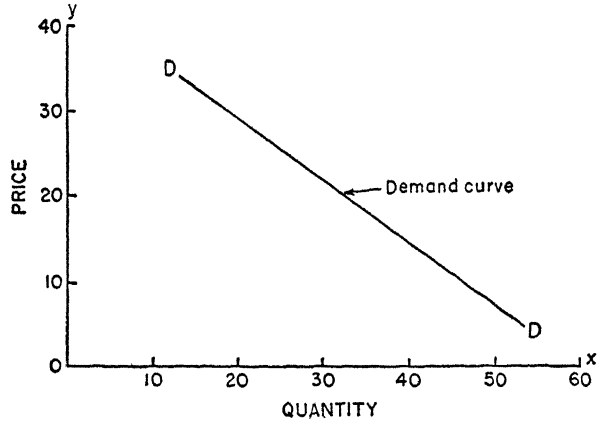

FIG. 3. AT A GIVEN TIME ON ANY MARKET FOR A UNIFORM GOOD, THE QUANTITY DEMANDED VARIES INVERSELY WITH THE PRICE.

quantity is bought at the same price or (2) the same quantity is purchased at a lower price.

Changes in demand may be shown graphically as in Figure 4. It is assumed that DD represents the consumer's demand curve

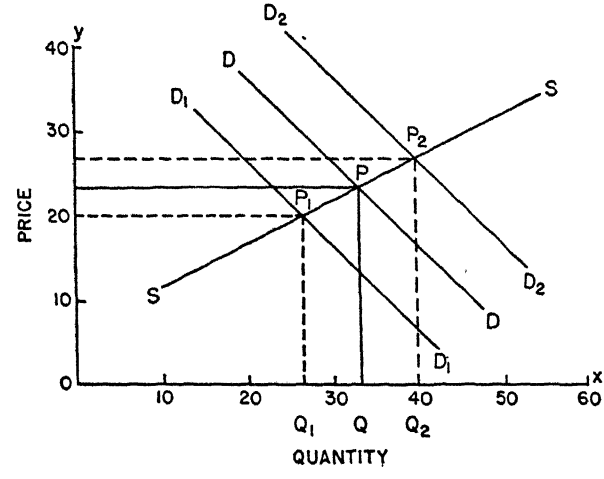

FIG. 4. DEMAND CHANGES FROM DD TO D_1D_1 OR TO D_2D_2, SUPPLY SS REMAINING CONSTANT.

for a given good at a given time. To show a change in demand over time, it is necessary to construct two other demand curves, D_1D_1 and D_2D_2. The first represents a decrease in demand, as compared to DD, and the second, an increase in demand. The market prices for each situation are P_1P and P_2, and the respective quantities purchased are OQ_1, OQ, and OQ_2. From this chart it can be shown that at a constant price, say P_1, the consumer would be willing to buy larger quantities as the demand situation changed from D_1D_1 to D_2D_2. These quantities would be greater than those actually purchased because of the supply situation as indicated by the supply curve, SS. It is equally obvious that if the quantity is fixed, say at OQ_1, the consumer in the three situations would be willing to pay a higher price as the demand changed from D_1D_1 to D_2D_2.

Supply

1. Law of supply. Since the price of a good or service will affect the amount or quantity that an individual purchaser will be willing to buy, the price offered likewise will influence the quantity of a good or service that sellers will be willing to sell. Some sellers will be willing to sell at a lower price than others, but all will be more willing to sell at a high than at a low price. Hence, as prices rise, more goods will be offered for sale. The amount offered at a given time on a given market is technically called the "supply." (See Figure 5.) The supply schedule

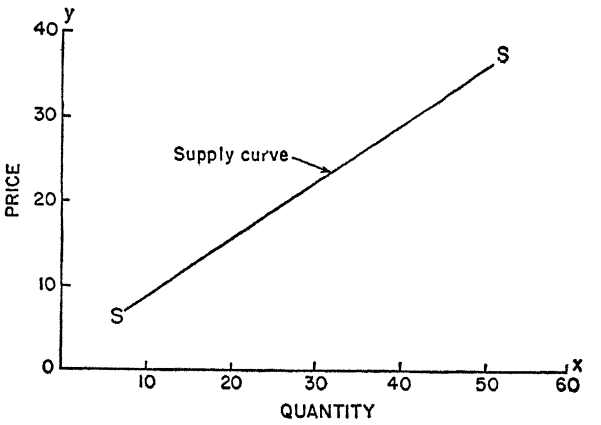

FIG. 5. THE SUPPLY OF A UNIFORM GOOD INCREASES AS THE PRICE INCREASES.

may be more adequately defined as the quantity that will be offered for sale at all possible prices on a given market through a given time. Thus the law of supply is the reverse of the law of demand and may be stated in this form: *At any given time on a given market the quantity of a given good offered for sale will increase as the prices advance, or conversely as price declines less goods will be offered for sale.*

2. Factors affecting supply. Why is it that sellers are willing to dispose of their goods at varying prices? This question may be answered by saying that the marginal utility of a good is not uniform for all sellers, or some sellers place a greater subjective value on each unit of the good than do others. This explanation is not altogether satisfactory because goods in the hands of sellers, unlike goods in possession of the ultimate consumers, are not intended for the sellers' own use. On the contrary, in most cases, the goods in the hands of sellers are intended for the ultimate consumer. It is, therefore, somewhat irrational to apply the principles of diminishing utility to goods held by others than the ultimate consumers of the goods. Generally, economists find the explanation not in the theory of marginal utility but in the desire of the seller to obtain profits. Each seller, under normal conditions, is attempting to attain maximum profits on each sale. Profits are determined by the difference between the cost of the goods, which the seller must incur, and the price at which he can sell the goods. The seller will attempt, of course, to obtain the highest price possible, but his price is affected by competition of other sellers. The lowest price that any seller will be willing to accept, or indeed can accept and still stay in business, is the one that will cover all of his costs including, of course, the charge for management or the sum that he could get in the next alternative for his services as a businessman or entrepreneur. The highest price that he will be able to obtain will depend, in any individual case, on his skill as a salesman and more especially, at least in the long run, on the conditions under which the goods are produced. As a result of these conditions, sellers are likely to be sensitive to anticipated changes in the cost of goods. If they anticipate, for any reason, a rise in costs, they will change their supply schedule, tending to lower the quantities offered for sale at the present prices. In the case of anticipated decrease in costs, sellers will tend to increase the

quantities sold at the present prices. If there is no anticipated change in costs and no change in demand, the supply schedule will remain unchanged.

3. Changes in supply. Changes in the seller's supply schedule are indicated graphically in Figure 6. The supply at a given time is indicated by the supply curve SS. A decrease in supply over time is indicated by the curve S_1S_1, and an increase by S_2S_2. At the same price the quantity sold is less when the supply schedule is represented by S_1S_1 than by SS. An increase in supply is shown by the supply curve S_2S_2 because a greater sup-

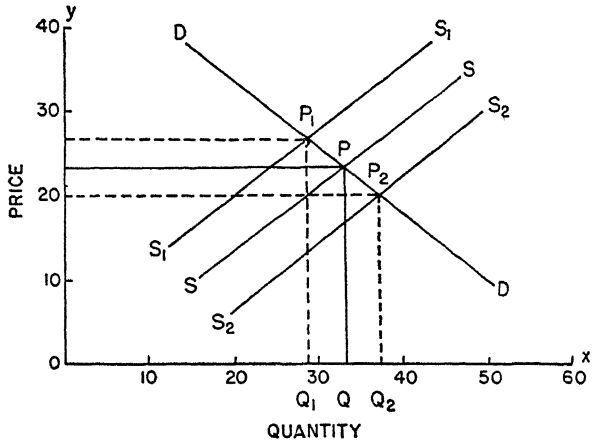

FIG 6 SUPPLY CHANGES FROM SS TO S_1S_1 OR S_2S_2, DEMAND, DD, REMAINING CONSTANT.

ply is sold at the same price, P, than was sold when the seller's supply schedule was SS. (See discussion on change in demand, page 51.)

Market Price

The market price of a given good is determined by the reaction of the buyer and the seller to prices. The manner in which the price, on a given market through a given time for a given good, is determined may be made clear by the consideration of a hypothetical seller's and buyer's schedule. Suppose, for example, that on a given market the buyers and sellers would be willing to dispose of or buy the quantities at prices indicated in Table 1. From these schedules it is not clear just what the price will be or

ucts are said to be *differentiated.* Through differentiation the seller can and does create a different demand schedule for each product.

Sometimes the law of one market price is questioned because it has been discovered that an identical article sold at one time for a lower or a higher price than at some previous time. Here, however, the "time" provision of the law has been violated, for the law clearly states "at a given time." Yet, on the basis of this so-called exception to the law of demand, it has been advocated frequently that the "law of supply and demand" be abandoned as unworkable, and it has even been suggested that the law be repealed.

Perhaps a "true" exception to the law is found in the price of products that are used as *lures.* In not a few instances merchants, in order to attract customers to their place of business,

TABLE 1

SUPPLY AND DEMAND OF COMMODITY A

Price (dollars)	*Quantities that would be*	
	Purchased	*Offered for sale*
.05	43.00	8.00
10	38.75	13.50
15	34.75	19.25
.20	30.50	25.00
.25	26.50	30.50
.30	22.25	36.25
35	18.00	42.00

may advertise that on a certain date a well-known product will be sold at less than the market price. In a case of this kind it is clear that the seller has violated the condition of "perfect competition." That is, the seller is not competing in the same manner as other sellers. On the contrary, he has for his own advantage declared that he will sell for a lower than market price. In this manner he attracts to his store customers who may, and usually do, buy other articles that are for sale. But even in such cases the situation thus created cannot be permanent. If the seller taking such action should maintain a lower than market price over a period of time, other competing sellers would be forced to lower their prices and in the end a new market price would be established.

Elasticity of Demand and Supply

There is another important feature of supply and demand that has to be considered, namely, *elasticity*. *Elasticity is the response of quantities bought or sold to changes in prices.* It is conventional to say that the elasticity of a good is either *unity*, *less than unity*, or *greater than unity*. However, the degree of elasticity

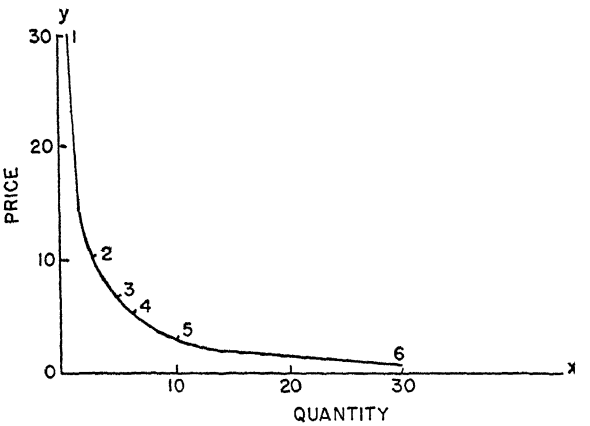

FIG. 8. WHEN THE DEMAND FOR A PRODUCT IS UNITY, THE DEMAND CURVE, PLOTTED ON AN ARITHMETIC GRID, APPEARS AS A PARABOLA.

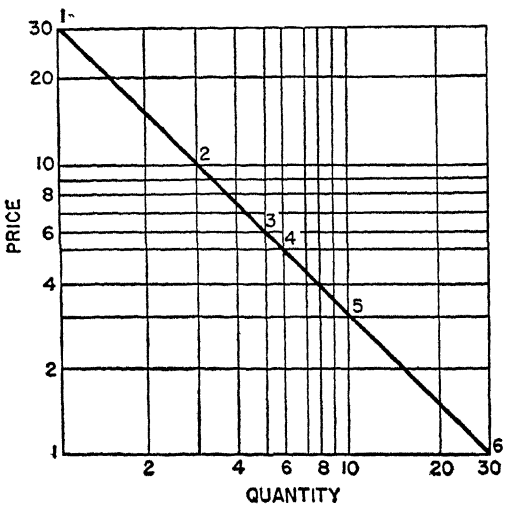

FIG. 9. WHEN THE DEMAND FOR A PRODUCT IS UNITY, THE DEMAND CURVE, PLOTTED ON A DOUBLE LOGARITHMIC GRID, APPEARS AS A STRAIGHT LINE.

may be determined mathematically by computing the *coefficient of elasticity*, which is the ratio of the rate of change in quantity to the rate of change in price. The formula used is:

$$\text{Elasticity} = \frac{\text{Percentage change in quantity}}{\text{One per cent change in price}}$$[9]

1. Demand. Thus, if the demand curve is such that a one per cent change in price results in an equal percentage change in quantity, then the percentage change in quantity divided by the percentage change in price is $\frac{1}{1} = -1$.[10] If, however, a change of one per cent in price is associated with a three per cent change in quantity, then the elasticity would be greater than unity or $\frac{3}{1} = -3$.

The elasticity of demand also may be determined graphically. Let it be supposed that P is the price of a given product and Q the quantity that will be bought at that price. Then $P \times Q$ will equal the value of the product that buyers indicate they will buy at price P. Now when the values of the P's $\times$ Q's remain constant, the elasticity of the demand curve is unity. (See Figures 8 and 9.) If, however, the shape of a demand curve is such that the values of P's $\times$ Q's increase for successive pairs of P's and Q's, the elasticity is greater than unity; and, if the value decreases, the elasticity is less than unity.

2. Supply. This discussion has been in terms of demand, but the reasoning applies equally well to supply. If, for example, a one per cent increase in price results in a positive change in supply of, say, one per cent, the elasticity of supply may be designated as $+1$ or unity, but if a one per cent change in price is accompanied by a 3 per cent change in quantity, then the elasticity of supply is $+3$ or more than unity. Finally, if a one per cent increase in price is associated with a less than one per cent increase in quantity, say 0.5 per cent, then the elasticity of supply is $+0.5$ or less than unity.[11]

[9] The use of one per cent change in the denominator is based on the fact that this formula holds true only for "infinitesimal" changes in price. See Kenneth E. Boulding, *Economic Analysis*, p. 128. New York: Harper & Brothers, 1941.

[10] In the case of demand, the elasticity is usually designated as negative, since a rise in price is accompanied by a decline in the quantity demanded.

[11] The elasticity of supply is designated as positive, since an increase in price is usually accompanied by an increase in the quantity supplied.

Some Practical Uses of Price Theories

It is possible to make practical application of the price theories that have been discussed. This is especially true in the realm of the farm programs that have been designed and put into effect in recent years, the major objective of which has been to improve the economic condition of the farmer. To attain this objective, several methods have been designed, including (1) production adjustments, (2) price supports, (3) price fixing, and (4) producer subsidies.

1. Adjustments in production designed to raise prices. The major assumption in this case is that changes in output will affect market prices—that is, a decrease in output will raise prices, and an increase in output will lower prices. This is a valid assumption if no changes take place either in the demand, type of product, or in the techniques of production. Adjusting production, however, is not apt to be effective in regulating prices, except in those cases in which rigid control of output is possible. Under conditions that prevail in agriculture, there is no assurance that efforts to adjust acreage will be successful. The chief reason for this is the uncertain effect of weather on output. It may happen that for a given year weather conditions might be either highly favorable, normal, or highly unfavorable. Since all production adjustments must be based on normal output, any variation from normal will result in outputs either "too large or too small." In either event, the major purpose of adjustments is not achieved, since a very small crop will result in prices higher than believed necessary and a very large crop will result in a very low or "unsatisfactory" price.[12]

Aside from the uncertainty associated with production adjustments, there is the question of the effect of changes in output on farmers' income. If the elasticity of the demand is unity throughout the range of the demand schedule, then there will be no change in the total income, since any change in prices will be exactly offset by an opposite change in output. For example, if a decrease in output of commodity A is from 1,000,000 to 800,000 units, and if the market price is increased thereby from \$1.00 per unit to \$1.25 per unit, then the total income from

[12] The exact changes in price will depend upon the elasticity of the demand curve.

1,000,000 units @ $1.00 is $1,000,000, and the income from the sale of 800,000 units @ $1.25 is also $1,000,000.

In the event that the elasticity of demand for commodity A is less that unity (that is, inelastic), the producers' income would be increased if production is curtailed. The reason for this is that the reduction in output is accompanied by more than a corresponding percentage increase in price; for example, 1,000,000 units $\times$ $1.00 = $1,000,000, whereas 800,000 units $\times$ $1.50 = $1,200,000.

Finally, if the elasticity of demand is greater than unity (that is, elastic), the producers' income will be less by a reduction in output. In all such cases the change in prices is less than proportionate to the change in output; for example, 1,000,000 units @ $1.00 = $1,000,000, but 800,000 @ $1.10 = $880,000.

2. Price supports and stabilization. Because of the uncertainty of output performance, production adjustment programs usually include, as a part of their design, provisions for support prices, purchase and storage, or purchase and disposal of the commodities under control. Price supports may be determined in one of several ways: They may be (1) arbitrary, (2) a percentage of normal, or (3) a percentage of parity.[13]

The function of support prices, however they may be determined, is to place a "floor" or level below which market prices will not be permitted to fall. In the event that actual production at any given time exceeds the calculated "necessary" production to maintain prices at support level, there will be a "surplus." How this surplus arises is illustrated in Figure 10, in which the demand curve (DD) indicates the quantities that consumers are willing to buy at all possible prices. If the government agency in charge of an adjustment program has decided to support prices at P, then the quantity that will fulfill this requirement will be OQ. In this case no surplus will emerge, and there will be no need to engage in surplus disposal. But, suppose that quantity available is OQ_1, then the market price will be P_1 and the difference between OQ_1 and OQ will be surplus. This surplus will have to be taken off the market, or if offered for sale, will be purchased on government account, thus forcing the market price to P.

[13] Parity prices are used as a base in the calculation of support prices for agricultural commodities in the United States.

There is always the possibility that the actual supply may be less than that needed to effect the calculated support price. In such an event, there will be a deficit and the market price will be higher than the calculated support price. If the program is designed only to prevent market prices from falling below the support price, then the occurrence of "short supplies" and higher prices will be of no concern of the government agency. But this is seldom the case, since a responsible government will not undertake to finance indefinitely the disposal of surplus. For this reason a government agency is usually empowered to engage in

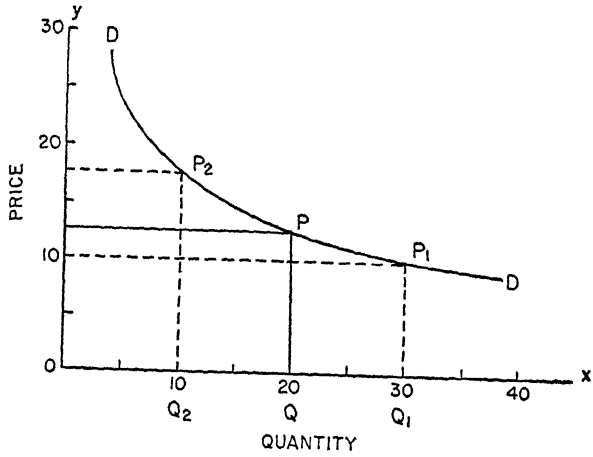

FIG. 10. CONDITIONS UNDER WHICH SURPLUSES AND DEFICITS EMERGE

both selling and buying operations. This power permits the government agencies to sell when the actual output is less than the "necessary calculated output" and to buy when the actual supplies are larger than the calculated necessary supplies.

Such operations will tend to stabilize prices over time. The extent to which stabilization will actually occur will depend upon the degree of accuracy obtainable in calculating the output that will be necessary to maintain prices at the support level. If output cannot be calculated accurately, then there will be a tendency, depending upon the bias in the estimates, either to accumulate burdensome or undisposable surpluses or to create high market prices because of "under supply."

It may happen, because of the variation in the elasticity of

demand curve throughout its range, that quantity taken off the market will always be greater than the quantity that will be needed to maintain the support prices when there is a short supply. In such an event, the government agency will accumulate an ever-increasing supply. A situation of this sort may be explained by reference to Figure 11. To maintain the price P, it would be necessary, in the event the supply was OQ_1, to remove from the market QQ_1. However, if the supply the following season was OQ_2, it would require only QQ_2 to maintain price P. But QQ_2 is only 67 per cent of the supply available for

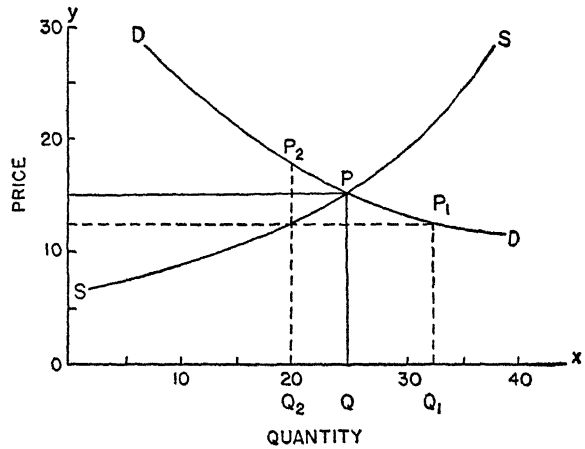

FIG. 11 THE EFFECT OF PRICE-FIXING BY GOVERNMENT FIAT ON THE SUPPLY OFFERED FOR SALE.

the previous season; hence 33 per cent would remain of the total supply available.

3. Price-fixing. Price-fixing involves a somewhat different procedure than price stabilization. Pure price-fixing is done by governmental decree. The government simply orders that under no circumstances shall the market price of a commodity be more or less than a fixed sum. There is no attempt to engage in buying or selling operations. The government acts simply to enforce its edict by the imposition of such penalties as may be necessary to discourage any deviation from the fixed price.

How such a scheme might work and some of the problems that usually emerge from price-fixing by decree are illustrated in Figure 11 where DD is the demand, SS the supply curve, and P

the market price of the commodity. Let it be supposed first that the fixed price is not P but P_1. Such a price would be agreeable to the consumers since they would be willing to buy OQ quantity at a lower price. But this is more apparent than real since QQ_1 quantity would not be offered for sale because sellers would not find it desirable to dispose of more than OQ. This would create a hiatus, or a gap, between the consumers and the sellers that could be eliminated only by "black market" operations.

To avoid black market operations the government may resort to rationing, which is a scheme of providing consumers with

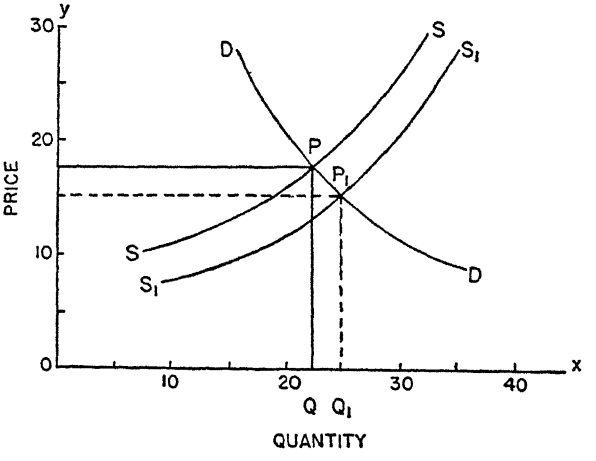

FIG. 12. THE EFFECT OF A SELLER'S OR PRODUCER'S SUBSIDY ON THE QUANTITY SOLD AND THE MARKET PRICE.

cards or other devices that entitle the holder to buy a given quantity of a good at the fixed price. But rationing, although it may prevent or at least reduce "black market" operations, will not induce sellers to supply more of the good than OQ. Under such circumstances all that rationing accomplishes is a more equitable distribution of scarce goods. It prevents the well-to-do from buying more of the product (because they have more money to do so) than the poor. This is not a case in which the rich bid up the price and thus obtain more of the commodity; rather rationing fixes the quantity they can buy at a fixed price.

4. Subsidies. Price-fixing will result in a decrease in the

the supply offered for sale, if the fixed price is less than the equilibrium price. To prevent this situation from arising or to encourage suppliers to offer more of a given product for sale, a seller's (or producer's) subsidy is employed. In this case the sellers are granted a fixed sum per unit on the part of the product that is actually sold. The effect of this procedure on the market price and on the quantity sold is illustrated in Figure 12, in which DD is the demand curve, SS the supply curve, P the market price, and OQ the quantity sold when no subsidy is in force. Since the seller, under a subsidy program, will get a fixed amount of money per unit for each unit sold, the quantity offered for sale, which is represented by the curve SS, will increase to S_1S_1. The distance between SS and S_1S_1 is uniform since the subsidy is a fixed sum. A shift of the supply curve (that is, S_1S_1) to the right results in a lower price, P_1, and in an increase from OQ to OQ_1 in the quantity sold.

The success of any subsidy plan depends on the accuracy with which the effect of the subsidy on production has been estimated. If the subsidy is too high, there will be a surplus, and if too low, a deficit. Because such surpluses and deficits normally will occur, most subsidy plans must be supplemented by governmental buying or selling. That is, the government must be in a position to buy the surpluses when they occur and to sell when current production is insufficient.

Questions

1. Why are agricultural economists interested in the prices of farm products?
2. What is meant by "economic forces"?
3. What is an economic want?
4. Define utility and name four types of utility.
5. Distinguish between price and value.
6. What is meant by a market?
7. State the law of diminishing utility.
8. State the law of demand and explain it. Why is the demand curve negative?
9. What conditions are necessary for a change in demand?
10. How does the law of supply differ from the law of demand?
11. How are changes in supply explained?
12. State the law of market price. Why is it necessary to state the conditions under which the law of market price is correct?
13. What is meant by the elasticity of demand? Of supply?

14 Explain what is meant by unity elasticity
15. In what way can price theories be applied to the understanding of "practical" price problems? Illustrate.

References

Blodgett, Ralph H., *Principles of Economics*, Chapter X. New York: Rinehart & Company, 1946.

Boulding, Kenneth E., *Economic Analysis*, Chapter 8. New York. Harper & Brothers, 1941.

Bowman, Mary Jean, and Boch, George Leland, *Economic Analysis and Public Policies*, 2nd Ed , Chapters 15, 16, and 17 New York Prentice-Hall, Inc., 1949.

Meyers, Albert L., *Elements of Modern Economics*, 3rd Ed , Chaps. V-VII. New York: Prentice-Hall, Inc , 1948.

PART II—PRODUCTION ECONOMICS

Nature of Modern Farming

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CHAPTER 5

Nature of Modern Farming

AGRICULTURE possesses characteristics that distinguish it from other sectors of our economy. Identification and description of these characteristics are basic as a means of understanding the nature of the problems of agriculture and for making adequate and fair appraisal of the solutions that have been formulated and put into effect or that may be suggested. The thesis of this chapter, therefore, is the distinguishing characteristics of farming, how these characteristics give rise to specific problems, and how they condition and set definite limits to their solution.

Characteristics of Farming

The characteristics of farming, which are readily recognized by anyone familiar with the industry, are:

1. The home and the farm business are integrated.
2. Farming is, in part, self-sufficing.
3. The functions of management and ownership are combined.
4. Most farms are small business units.
5. Farm products are not easily standardized.
6. Farmer's control over production is limited, and production is highly competitive.
7. The demand and supply for farm products tend to be inelastic.
8. Farming is subject to great risks.
9. Financing farming is a difficult task.
10. Farming can be conducted by operators with minimum educational qualifications.
11. Fixed costs are usually a high percentage of the total costs of production.

The Integration of the Home and Business

Farming is a unique industry in that it combines a mode of life and a business enterprise. This combination no longer exists in present-day industries except in a few widely scattered, so-called neighborhood enterprises. With the exception of agri-

culture, these industries, however, do not play an important role in the life of the nation. It is true that they employ thousands of people, but the aggregate volume of production intended for sale constitutes a small percentage of the total national output.[1]

Let us examine more closely this unique type of business enterprise. On the typical family farm the residence is not simply a home, separate and apart from the farm, but it is the headquarters from which the farmer directs the farming operations. Nor do members of the farm family form an independent unit. On the contrary, they are an integral part of the farm. They assist the farmer in operating the farm and often advise him as to how the business should be organized and operated. The funds received from the sale of products are seldom, if ever, divided rigidly into those that will be used for personal expenditures and those that will be used to operate the business. Even if these funds were segregated, it would be difficult, if not impossible, to classify some purchases. In some instances the items purchased may be used partly in the home and partly on the farm. Many household utensils are of this type. Again, it is not an easy task to identify precisely the expenditures for investments in such items as water and lighting systems, which may be used to service both the home and the business. In these and other ways the farm and the home form an integrated unit.

The Self-Sufficiency of Farming

In the early days of this country the farmer produced chiefly for his own needs. There were instances in which products, especially cotton and tobacco, were produced primarily for sale, but on the whole the farmer produced for a known and restricted market. This situation characterized American agriculture up to the beginning of the Civil War, after which farming rapidly assumed the aspect of a business enterprise, producing commodities for sale rather than for use on the farm.

In the evolution of farming the element of self-sufficiency has been reduced in importance but by no means has it been re-

[1] These neighborhood industries are not to be confused with small business units. They are, for the most part, unincorporated and are operated on a family basis in much the same manner as the typical family farm

moved. Studies by several investigators indicate that modern farming is still partly self-sufficient as to food, fuel, and shelter.[2] Unpaid family labor is much more significant than hired labor. Although seeds are purchased in much larger quantities than formerly, most farmers retain a part of their crops for seed. Commercial fertilizers are being used also in increasing quantities; but, for the United States as a whole, the expenditures for fertilizers are relatively insignificant. (See Table 2.) Farmers produce about 70 per cent of the feed they need for their live-

TABLE 2

EXPENSES AND ASSETS PER FARM IN THE UNITED STATES*

	Amount Spent for			*Value of Assets*		
Year	*Labor*	*Fertilizer*	*Feed*	*Machinery*	*Livestock*	*Land and Buildings*
1909	$ 72	$18	$ 47	$199	$ 774	$ 5,471
1919	170	51	170	557	1,243	10,284
1929	152	43	146	525	964	7,614
1939	128	36	120	501	747	5,518
1944	318	68	414	878	1,446	7,917

* Source U S Census of Agriculture

stock.[3] Finally, much of the power used on the farm is derived from work animals. It is, of course, true that mechanical power is increasing in use, but, even so, mules and horses supply the greater part of the needed power.

The Function of Management and Ownership in Farming

An important characteristic of farming is the association in one person of the functions of management and ownership. This association of the two functions is characteristic of early business enterprises. In former times, almost all types of industries were conducted by the individual who owned the business and controlled the operation of it. In modern times, in commercial and industrial establishments, management is usually separated from ownership. That is to say, the owners

[2] See U S. D. A *Farmers' Bulletin 635*, 1938, and U S. D A. *Department Bulletin 1466*.

[3] Derived from data published in *Feed Statistics*, October, 1940, U S D. A Supplement to *The Feed Situation*

or stockholders do not direct the details of the business but usually hire foremen, superintendents, and managers for this purpose. In support of this dual function of the farm operator, data from the latest census may be used. This source states that 56 per cent of the farmers owned the farms that they operated, and less than one per cent of the farms were operated by hired managers. In the case of leased farms, there is a partial separation of the functions of management and ownership, but less than 25 per cent of the tenants operating farms were cash tenants. The bulk of the leased farms was operated by share tenants, who were, to a large extent, under the direct supervision of the owner or landlord.

Farming—an Industry of Small Units

In farming, the unit of organization is small. In 1945 there were 5,859,169 farms, the average size of which was 194.8 acres. There was, of course, considerable variation in the size, but about 80 per cent of all farms were 200 acres or less. The capital invested in implements and machinery in 1945 was $5,146,851,100 or $878 per farm. The livestock was valued at $8,472,431,333 or $1,446 per farm. The investment in land and buildings was $46,388,925,560 or $7,917 per farm. Thus, the total investment in machinery, livestock, and fixed assets averaged about $10,241 per farm. The number of persons fourteen years of age or over living on farms was approximately 16,045,550 or less than 3 persons per farm.[4]

Although the average size of the farm business unit is small, the significance of the larger units must be recognized. The number and relative importance of the various size groups as producing units are shown by the data presented in Table 3. These data indicate that 511,000 large units (8.7 per cent of all units) produced 46 per cent of the total gross value of agricultural output.

There are two things that tend to limit the scale of production in farming; first, there is the dependence of farming upon area, and second, there is the discontinuous output due to the seasonality of production. Plants must have space or area upon which to grow, and as a consequence, both animal and crop

[4] The size of the unit is somewhat larger than these data would indicate because the Census definition of a farm includes land operated by croppers.

production must be conducted on an extensive scale. It thus happens that, since labor and capital cannot be concentrated, management rapidly becomes difficult as the size of the farm business is increased. In the representative urban industries, on the contrary, land is relatively less important. In most cases a large amount of labor and capital may be concentrated on a relatively small area. The concentration of labor and capital makes supervision comparatively simple and, hence,

TABLE 3

THE COMPOSITION AND THE RELATIVE IMPORTANCE OF THE FARM BUSINESS UNITS, UNITED STATES, 1945*

	Farms		*Population*			*Per Cent of Gross Value of Output*	
Class of Farms	*Number* (000)	*Per Cent*	*Number* (000)	*Number per Farm*	*Per Cent*	*Actual*	*Accumulative*
Large-scale	102	1 7	888	8.7	3 7	22	22
Large family	409	7 0	2,044	5.0	8 5	*24*	*46*
Medium family .	1,173	20 0	5,106	4 4	21 3	30	76
Small family	1,662	28 4	6,844	4.1	28 5	17	93
Part-time	602	10 3	2,617	4.3	10 9	2	95
Small holdings	924	15.8	3,368	3.6	14 0	4	99
All other units	987	16 8	3,133	3.2	13 1	1	100
Total	5,858	100 0	24,000	4 1	100 0	100	100

* Source United States Census of Agriculture, 1945, Special Report, 1945 sample Census of Agriculture, pages 120, 121, 123

makes large-scale operation possible. It is true, of course, that in some agricultural areas large farms will be found, but even in such instances a farm employing fifty or one hundred men is rare. (See Table 3.) However, a factory that does not employ more than fifty men is considered small, and numerous instances exist where thousands of workers are employed in a single factory and where immense outlays are made for materials and fixed capital.

Because large-scale production depends also upon continuous output, chiefly of a single product, it is readily understood why agriculture cannot easily develop into a large-scale industry. Instead of producing a single product, the farmer is forced to diversify or to produce several products. The diversification in

production thus forced upon the farmer makes it impossible for him to employ highly specialized machines or to introduce minute division of labor. Instead of having one machine for a given operation, farmers usually employ machines that will do several operations. Instead of teaching the laborers to perform one task, the farmer must teach his laborers to perform many tasks. Hence, in farming, the very foundation of large-scale production, continuous output and division of labor, is lacking.

Farm Products Not Easily Standardized

Another distinguishing feature of farming is the great difficulty attending the standardization of farm products. It is true that farmers, to a limited extent, may determine the character of their products. For example, it is possible, by selecting and breeding, to change materially the character of plants and animals. But standardization by such means is not as effective as standardization by machine methods and processes. By use of machines it is possible to turn out large quantities of articles identical as to shape, size, and quality. All that the farmer can do is to get the most uniform products possible by breeding, selection, and cultural methods, and then to sort or grade the products. This method of sorting and grading, when compared with the machine method, is expensive. To be sorted economically, agricultural products must be assembled, but, as the output on the average farm is small, volume can be obtained only through some form of collective effort either private or cooperative. The efficient management of it is a difficult task.

Farmer's Control Over Production Limited

One of the well-recognized elements of success in the management of any business enterprise is control of production. When production is not controlled or not controllable, serious maladjustments are likely to occur, because, at times, more products will be produced than can be sold profitably, and at other times not enough products are available when prices are high. Some businessmen avoid overproduction and underproduction by adjusting their production (both as to total amount to be produced and the rate) to anticipated demand. In fine, they estimate the probable future prices and costs, and on these estimates decide the amount of goods that can be produced

profitably. Farmers, as a rule, do not do this; they react to prices at planting and breeding time. If the price of a specific product is high at planting time, the acreage used will be increased; and, if prices are low, the acreage will be reduced. The farmer reacts in a similar way in reference to animal production. When prices of animals or animal products are high, farmers embark on an extensive program of expansion; and, when prices are low, they restrict their breeding operations. When the large output is sold, the prices are depressed; when production is sufficiently curtailed, prices are high. The typical farmer misses the market in almost every case.

But even if farmers could anticipate prices and base their production on anticipated market prices, they cannot control production because weather is an important factor affecting agricultural production, and weather conditions cannot be accurately forecast. Farmers must plan their production program on normal weather conditions. If the weather is extremely favorable, overproduction may result; and, of course, on the other hand, if weather conditions are unfavorable, underproduction may result.

Industrial establishments often gain control over production through combination. That is, independent establishments producing the same or similar articles often merge their interests into one large corporation. With one large corporation, the control is centralized, and the production may be better adjusted to anticipated demands. Such a control of production usually results in a larger net profit than would be realized if each corporation operated independently. Control of production through combination, which is open to both manufacturing and commercial concerns, is not used by farmers. Farmers do not associate themselves in groups for the purpose of control of production. It is a fact that farmers form cooperative marketing associations, but the object is not the control of production. The object is to market their products efficiently. Any profits thus realized are reflected back to the individual producer. This increase in profits tends to stimulate the farmer to greater production, and this may mean lower prices. In other words, the board of directors of a cooperative marketing association seldom exercises control over the production of the individual members. If agricultural production is to be controlled, it must

be controlled by the individual farmer; and this, as has been noted, is a difficult thing to accomplish even under governmental supervision.

The Elasticity of Demand and Supply of Farm Products

A characteristic of farming, which gives rise to a number of important problems, is the nature of the demand for and supply of farm products. Since most farm products are necessities, there is little or no tendency for consumers to increase or decrease their purchases in response to price changes. Although consumers may, for example, increase their purchases of potatoes as prices decline, the response percentage-wise is much less than the percentage change in prices. The ratio between the rate of change in the quantity demanded and the rate of change in prices is the coefficient of elasticity of demand. When such a coefficient is less than unity (that is, less than one), the demand is said to be inelastic. Since the demand for farm products is, in general, of this type, violent fluctuations in the prices of farm products often occur. When the supply of potatoes, for example, is less than normal consumption requirements, prices will tend to rise, often to high levels, because the consumers will tend to buy their normal requirements whatever the price. If the supply of potatoes is in excess of normal consumption requirements, prices are apt to be low and may be very low—that is, consumers will not increase their purchases to any great extent simply because prices are low.

The supply of farm products also tends to be inelastic. Farmers respond to changes in prices by adjusting their output. But farmers' response to price changes depends not upon absolute changes in prices but rather upon relative changes, especially when a farmer has a choice in production. When this is true, a general rise in price of all products from which the farmer may exercise a choice may not result in a proportionate increase in supply. An increase will occur only for those products the prices of which have changed relative to the prices of other products. Because of this, farmers may, and often do, increase the output of some product even when all prices of all products are declining. Again, farmers may not increase output when all prices are rising, provided all prices are rising at the same rate. If, however, the price of some products is rising faster than oth-

ers, then (when farmers have a choice), production of the product with the more favorable prices will be increased, the production of others decreased.

Changes in output, however, are not solely a function of prices. The reason for this is that weather, which affects output, is not price-conscious. Hence, a departure from normal weather conditions may change the volume of output quite apart from the effect of changing prices.

Farming is Subject to Great Risk

Farming is constantly subjected to damage from excessive rainfall, drought, hail, floods, insect pests, and plant and animal diseases. To a marked degree, urban industries can protect themselves against weather conditions; and they are not subject, to any large extent, to insect pests and plant diseases. Furthermore, many risks peculiar to urban industries are insurable, but insurance companies have found it difficult to work out a plan that will give farmers adequate protection at a reasonable cost. As a matter of fact, farm insurance is confined largely to fire and hail insurance. There really is no such thing as general farm insurance.

The inability of the farmer to obtain protection has forced him to rely upon self-insurance. As a safeguard against extreme losses, he finds diversification of production the most effective. Although diversification of this kind does not always prevent losses from plant and animal diseases, insect pests, and climate conditions, it does tend to reduce losses from these causes.

Other means of avoiding losses have been developed. For example, plants have been bred that will mature within the usual period between killing frosts; others have been bred to resist drought and plant and insect diseases. These methods of adapting plants to conditions have often saved farmers from serious losses. In some instances, whole areas have been made prosperous following serious crop damage. Farmers also reduce losses by careful observation of weather conditions. By observing the normal occurrence of the last killing frost in the spring and the first killing frost in the fall, farmers may adjust their farm operations so that damage from freezing will be minimized or eliminated. Losses because of seed sterility may be eliminated by testing seed before planting. However, when all of these

various kinds of insurance are utilized, there still remains a considerable element of risk, and heavy losses occur annually.

Financing Farming Expensive

Because of the various hazards to which agriculture is subject, agricultural production is not easily financed. Credit based on crop production is hazardous, and, as a result, the interest rates are often high. In the case of livestock, credit must be extended over a period longer than a year, usually eighteen months to three years. Cattle, the basis of such security, may die, or they may be moved from place to place. For these reasons, the extension of credit on cattle, unless the farmer is well known to the creditor, is not readily obtained at reasonable costs. These difficulties do not apply to land. Land is fixed, and credit based on land may be easily obtained.

By contrast, industrial units have distinct advantages in financing. It is possible for such units to sell common stock, which does not obligate the firm either to repay the stock or to pay anything for the use of the money received. In addition to common stock, preferred stock may be used to finance a business enterprise. This type of security is somewhat more demanding with respect to the payment of dividends but is nevertheless a means of obtaining money at low rates. Then, too, industrial firms have access to the loan markets for short-time loans at very low rates. In these and in other ways business corporations can finance the capital structure and their operation at minimum cost, whereas for farmers the cost tends to be a maximum.

Professional Training of Farm Operators Limited

Modern farming tends to differ markedly from urban industries in training required of the operator. Pioneer farming was a simple occupation. The essentials for success were good health, physical strength, dexterity, and ability to withstand for long periods of time physical hardships and isolation. Today the elements of success have changed somewhat. The general use of machinery in farming has relieved the farmer of some of the hard labor, but, even so, physical strength is still a prerequisite. The fact that the farmer must produce for the market and must judge to some extent market demands has

sharpened his intellect. The process of commercialization in farming has not gone far enough, however, to make him an alert businessman. The ordinary farmer can still get along after a fashion without a great deal of education. Surveys show that the education of a large percentage of farmers was less than the twelfth grade. These data and others that have been assembled indicate that the average farmer is acquainted with little more than the simple rudiments of knowledge. In recent years vocational education and extension work have added much to the farmer's knowledge of technical production; but his knowledge of the principles of business, as founded upon economics, accounting, statistics, and psychology, is still meager and often of the crudest sort.

Fixed and Variable Costs

Farming is one of those industries in which the greater part of the total cost structure does not vary with output. This structure consists of what are called "fixed costs." In contrast to these are the "variable costs," which vary with output. The following classification indicates the precise nature of each of these types of costs:

Fixed Costs:

1. Rent for land and buildings (or interest on, and amortization of, mortgage).
2. Interest on investment in equipment and livestock.
3. Obsolescence or that part of the depreciation on buildings, machinery, and livestock that does not vary with their use.
4. Insurance on buildings, equipment, and livestock.
5. Taxes on real estate and personal property.
6. The cost of family labor.

Variable Costs:

1. Current supplies, such as seed and fertilizer.
2. Hired labor and other services.
3. Current repairs and replacements, which vary with the use of buildings and equipment.[5]

This classification of costs, although describing the nature and indicating the function of each, does not indicate their relative importance in the productive processes. The magni-

[5] Sherman E. Johnson, and Associates, *Managing a Farm*, p. 341. New York: D. Van Nostrand Co., 1946.

tude of the fixed costs arises out of the fact that the expense of maintaining land, equipment, and family labor is normally much greater than the cost of variable factors, such as seed, fertilizer, spray materials, and hired labor. This difference in magnitude, however, is not the most important feature of these two types of costs. Their significance arises out of the fact that fixed costs tend to make adjustments in production much more difficult than do variable costs. And this difficulty tends to increase as the relative size of the fixed costs increases. When the farmer is faced with changing prices of his products, he cannot adjust quickly his fixed costs to take advantage of this situation.[6] But this is not the case with variable costs, which may be adjusted quickly to changes in prices of cost goods and prices of the products produced.

This difference in the two sets of costs is especially important to the farmer in the event that he faces a period of declining prices. Although not all fixed costs must be paid in cash each year, all contractual obligations, such as principal and interest on mortgage debts, taxes, insurance premiums, and cost of family labor, cannot be delayed. In the case of noncontractual obligations the costs continue in the form of depreciation and obsolescence of buildings, machinery, and equipment. Even the rent of land and interest on capital may be delayed, but only at a sacrifice on the part of the owner. These costs, although they may be delayed, must ultimately be paid if the farmer is to remain in business. If they are not paid, the land, capital goods, and the family labor must be exploited. Hence, even under declining prices the farmer will attempt to produce and sell enough products to obtain an income that will at least enable him to recover his cash costs and to meet his contractual obligations.

Adjustments during periods of rising prices also are affected by cost structure. It is difficult, if not impossible, for the farmer to buy or otherwise acquire additional land, or to erect quickly additional buildings, or to buy or rent expensive equipment. Thus the farmer is not able to take full advantage of rising prices by increasing production. In an event of rising

[6] This applies only to the short-run. Over a period of years the farmer may adjust his fixed costs by increasing or decreasing the size of his fixed investments. In the meantime, he may be subjected to great difficulties and suffer heavy losses.

prices, his only recourse is to increase the use of the variable factors and thereby increase the intensity of his operation. But this method has its limitation since production cannot be increased directly proportionally to the increase in the variable factors; that is, production may be increased only at a diminishing rate.[7]

Significance of the Characteristics

Throughout this chapter attention has been directed to the characteristics of farming on the action of farmers. Two of these need to be emphasized—self-sufficiency and the relation between fixed and variable costs. With respect to the first, modern farming stands in sharp contrast with the modern capitalistic enterprise. The latter is not to any large extent self-sufficing. The labor used is hired, and the equipment and materials necessary for operation are purchased in the open market. In short, the modern urban capitalistic business has to meet its expenditures or obligations from day to day or from week to week, as these obligations, as a rule, cannot be postponed. In contrast, the farmer does not have to act in this way. The fact that he may defer some payments helps to explain the peculiar action of farmers.

To illustrate, the cotton farmer has invariably reduced his acreage when the price of cotton at planting time was low, and increased his acreage when the price at planting time was high. This type of action, in the main, has reduced his income, because it has been a factor in causing overproduction of specific crops in some years and underproduction in other years. The self-sufficing character of modern farming is unquestionably the principal cause of this, and it is argued that if the farmer were compelled under all conditions and at all times to pay a competitive labor wage and to pay market and competitive rates for power and materials, he would be compelled to practice economy, to organize his farm on a business basis, and to keep production adjusted to changing economic conditions. But since the farmer is not forced to do this, he is not alert either to short-time fluctuations in the market or to long-time trends in economic conditions that seriously affect his economic status.

But even if the farmer would or could adjust his production to

[7] See Chapter 8, for a discussion of this subject.

the demands of the market, there are other characteristics of farming that would tend to prevent him from obtaining an adequate income. Among the more important of these are the highly competitive nature of farming, the uninsurable risks, and the high production costs due to the relatively small size of the production unit.

Questions

1. In what ways are the home and the farm business integrated?
2. What is meant by the statement that farming is, in part, self-sufficient?
3. In what special cases can it be said that the ownership and management functions are performed by the same persons?
4. "Most farms are small business units." What proof is there for such a statement?
5. As compared to large units, do the smaller units supply more or less of the total farm output?
6. Why is it difficult to standardize farm products?
7. Discuss the farmers' control over output.
8. How important is the elasticity of demand for and the supply of farm products?
9. In what ways is the financing of farming expensive?
10. Is it true that a farmer needs no education to be a good farmer?
11. What is meant by (a) variable and (b) fixed costs? Give several examples of each.
12. Why is it that farmers cannot always take full advantage of rising prices?
13. Write a paper showing to what extent each of the eleven characteristics of farming apply to farming in your neighborhood.

References

Boss, Andrew, and Pond, George A., *Modern Farm Management*, Chapter III. Saint Paul: The Webb Publishing Company, 1947.

Forster, G. W., *Farm Organization and Management*, Chapter 1. New York: Prentice-Hall, Inc., 1947.

Johnson, Sherman E. and Associates, *Managing a Farm*, Chapters 1 and 2. New York: D. Van Nostrand Company, 1946.

CHAPTER 6

Types of Production in the United States

FARMERS' economic problems vary in time and place. The farmers of the 19th century were confronted with problems that varied widely from those of today. When the nation was young, the farmers were concerned more in subduing the wilderness than in selling hogs in Chicago or St. Louis. Likewise, the problems of a farmer in the Midwest are often quite different from those located in a New England State. One may be confronted with the problems of producing hogs for sale, whereas the other might be struggling with the problem of producing and processing milk. In any case, the farmer is trying, to the best of his ability and knowledge, to use his resources of land, labor, capital, and management to the best possible advantage. In so doing, each farmer develops a *system of farming* by which or through which this objective may be accomplished. In short, systems of farming are the outgrowth of the farmer's effort in using all of the factors of production to produce those farm products that will give him the highest net returns.

Systems of Farming and Types of Farming Defined

It is necessary to distinguish between a system and a type of farming. A system of farming is a specific combination of crop and livestock enterprises, whereas a type of farming has a much broader meaning. When reference is made to a type of farming, it means that for a large number of farms included within a given geographic area there are certain features by which it can be designated. For example, the farming in some areas of the South is designated as "cotton farming" because cotton production is such an important characteristic of the agriculture. On each farm in the Cotton South there will be a specific combination of farm enterprises including cotton, which is called a system of farming. Over a larger area than a farm, however, cotton would be the predominant crop. Thus

a type of farming is a term used to designate a degree of uniformity that prevails with respect to the crops grown, types of livestock kept, and methods used in production.

Major Types of Farming in the United States[1]

It is perhaps obvious that there are a great many systems and types of farming in a country that exhibits such a wide variation in natural resources. Indeed, it is probably true that the system of farming varies from farm to farm. From a situation of this sort it would be possible to delineate a large number of different types of farming. Indeed over 900 have been so delineated. But using the criterion of similarity on a rather broad scale, eleven major types of farming have been delineated and described. For a farm to be classified as a specific type, at least 50 per cent of the farm income must be obtained from one source. For example, for a farm to be designated as belonging to a type of farming that might be called "cotton farming" at least 50 per cent of the total income of the farm would have to be derived from the sale of cotton and cotton seed. Any farm not meeting this requirement would have to be classed in some other category.

The major types of farming are as follows:

1. Cash-grain. Corn, wheat, oats, barley, flax, rye, emmer, and spelt, buckwheat, rice, and grain sorghum.

2. Cotton. Cotton (lint) and cottonseed.

3. Crop-specialty. Sweet sorghum for syrup, sugar cane, sugar beets, maple sugar and syrup, soybeans, cowpeas, velvetbeans, ripe field peas and beans, tobacco, hay, peanuts, potatoes (Irish or white), sweet potatoes, mushrooms, hops, broomcorn, and other field crops.

4. Fruit. Small fruits, tree fruits, nuts, and grapes.

5. Truck. All vegetables sold.

6. Dairy. Milk, cream, butterfat, butter, and dairy cows and calves.

7. Poultry. Chickens, ducks, geese, turkeys, and eggs.

8. Animal-specialty and stock ranch. All classes of meat animals, such as beef cattle, sheep, and hogs; also wool, mohair, and slaughtered animals (for both types).

[1] This section is adapted from F. F. Elliott, *Types of Farming in the United States*, p. 7, United States Department of Commerce, Bureau of the Census, 1933.

9. General. Farms are classified as "general" when the value of products from any one source does not represent as much as 50 per cent of the total value of all products of the farm. If the value of products from each of two sources represents 50 per cent or more of the total, the farm is classified as "general," except for specialized combination types, such as cotton-tobacco, fruit-truck, dairy-poultry, and other similar combinations, when it is classified as one or the other of these types, depending upon which is dominant in the locality.

10. Self-sufficing. When the value of the farm products used by the family is 50 per cent or more of the total value of all products, the farm is classified as "self-sufficing."

11. Abnormal. For convenience, farms of unusual types, which differ markedly from ordinary farms, are designated as "abnormal." It is difficult to give precision to the term "abnormal." Obviously, what is abnormal to one individual may not necessarily be abnormal to another. The exact meaning will be determined by what concept of normal is held. The term is here used loosely to include five kinds of farms (subtypes), defined specifically as follows:

a. Institution or county estate. Institution: When the farm is owned or operated by a public or semi-public agency, for example, a school, college, church, foundation, or asylum. *County estate:* When the value of the residence is $25,000 or more on farms consisting of 10 acres or over.

b. Part-time. When the operator spends 150 days or more at work for pay at jobs not connected with his farm, or reports an occupation other than farmer, provided the value of products of the farm is not more than $750.

c. Boarding and lodging. When the receipts from boarders, lodgers, and campers represent 50 per cent or more of the total value of all products and receipts of the farm.

d. Forest-product. When the value of forest products sold represents 50 per cent or more of the total value of all products of the farm.

e. Horse farm, feed lot, or livestock dealer. Horse farm: When the value of horses or mules sold represents 50 per cent or more of the total value of all products of the farm; or when the inventory items show that the principal production is horses or mules. *Feed lot:* When the value of beef cattle, sheep, and hogs

sold represents 50 per cent or more of the total value of all products of the farm and when the acreage in the farm is small, little, or no crop production, and expenditures for feed are large. *Livestock dealer:* When a large number of livestock is reported under both purchases and sales, little or no feed being either produced or purchased, little or no pasture reported, and the operator reports an occupation other than farmer or spends a number of days at work for pay at jobs not connected with his farm, and when the value of livestock sold represents 50 per cent or more of the total value of all products of the farm.

When a farm is not operated, or when there is an incomplete report of the quantity of crops and livestock raised and sold, or when other information is missing or incomplete, the farm is not classified by type.

Principles Governing the Formation of Types of Farming

To say that farmers devise systems of farming in order to use their resources to the best advantage is in no sense an explanation of their actions. It is simply a statement of fact, in much the same sense that someone might remark that an object is black. To this, most normal persons would agree; but when asked to explain why this object is black rather than blue, they would need the advice of a physicist. In much the same way the explanation of why farmers devise specific systems of farming is embedded in economic laws and principles, the most important of which is the law or principle of "relative advantage." This principle may be stated as follows:

A farmer, in order to use his available resources to the best advantage, will produce those crops and classes of livestock for which his farm is relatively best suited.

The word "relative" should be explained more fully. Often the idea is expressed that the word means a contrast between the same crop on two different farms or on two different areas. But this is not the way in which the word should be used. When it is said that the farmer chooses those enterprises for which his farm has a relative advantage, the comparison is made between different enterprises on the same farm. An illustration or two will make the distinction clear.

Iowa farmers specialize in corn production, not solely because this crop can be produced more cheaply in Iowa than in some other section of the United States—although such may indeed be true—but because labor, land, capital, and management can be more effectively used in the production of corn than in the production of any other crop that may be grown. Hence, Iowa farmers find it more profitable to devote as much time as possible to the production of corn and then to supplement corn production with other crops or classes of livestock for the absorption of any unused resources.[2]

This statement of the principles of relative advantages should not be construed to mean that the cost of producing or the price of a given product (for example, corn) in different areas has no bearing on what a farmer will produce. The law, as stated here, is limited to a given time. It is quite obvious that, over a period of time, changes in techniques in production—to mention only one force that might affect the cost of production more in one area than another—would affect the order of advantage among various products in a given system or type of farming. But when this force has spent itself, a new order of advantage will be established, which will determine how the farmer will allocate his resources among the various enterprises available to him.

Factors Affecting Relative Advantage

The factors that give one enterprise a relative advantage over another on the same farm or in the same area are differences in the physical factors, economic forces, and political, social, and economic institutions.

1. Some physical determinants.[3]

a. Climate. Climate plays an important role in both crop and livestock production. It rarely happens that two crops or classes of livestock have exactly the same climatic requirements for optimum production. By optimum is meant the peculiar combination of rainfall, temperature, humidity, and sunshine that will result in the maximum production as to both quality

[2] Adapted from G. W. Forster, *Farm Organization and Management*, pp. 63-64. New York: Prentice-Hall, Inc., 1938.

[3] Adapted from G. W. Forster, *Farm Organization and Management*, pp. 65-68. New York, Prentice-Hall, Inc., 1938.

and quantity. The combinations of climatic factors for optimum production are legion. One crop may require an abundant, uniform rainfall throughout the growing season combined with moderately high daily temperatures and a large number of partially cloudy days. To illustrate, cotton requires a long, rather hot growing season combined with frequent rainfalls fairly well distributed throughout the growing season and a large number of cloudless days. For optimum results in the case of cotton, the rainfall should occur in the late afternoon or at night. Corn reaches optimum production when rainfall is abundant and when the growing season is relatively short and hot. Grass crops, as a rule, require a cool climate combined with an abundant rainfall and a large number of partially cloudy days. Grain crops differ widely in their climatic requirements. Oats, for example, require a cool moist climate; wheat requires a rather cool growing season, but it is not so dependent as oats upon the amount of moisture.

Climate may affect crop production in another way. Some crops are peculiarly affected by the amount of rainfall or by marked changes in temperature during certain periods. For example, heavy rainfall coming at the time of harvesting of dewberries is usually disastrous. On the other hand, an occasional heavy rainfall during cotton harvesting season is not serious. The reason for this is simple enough. Dewberries are a highly perishable crop and must be harvested in a very limited period or they will become a total loss. Cotton, on the other hand, being less perishable and having a longer harvesting season, is not seriously affected by an occasional heavy rainfall.

b. Soil. The effect of soil on agricultural production has long been recognized. For optimum production some crops require a light, dry soil; others, a heavy soil well supplied with organic matter; still others, a medium soil only fairly well supplied with organic matter. Corn, for example, requires a soil well supplied with organic matter and sufficiently heavy to retain plant food. This crop, of course, will grow on light soils not well supplied with organic matter, but the expense of production on such soils is usually too great for profitable production. Cotton for optimum results requires a light soil in which considerable organic matter is desirable but not absolutely necessary, as commercial fertilizers may be used to supply the neces-

sary plant food. Grain crops, as a rule, do not require as rich a soil as does corn. If the land is too fertile, the grain crops tend to produce more straw than grain. And in the case of grain crops a rapid growth may cause lodging, thereby decreasing the grain output. Tobacco is a crop especially sensitive to soil conditions. The quality of tobacco is determined in a large measure by the type of soil. For example, the most desirable type of flue-cured tobacco is produced on light soil or on sandy loams having yellow or red subsoil with a small amount of clay. Burley tobacco reaches its best development in the limestone soils. Alfalfa is a forage crop requiring a soil rich in lime for best results. Other legumes, while requiring lime, will do well even on soils not especially noted for their lime content.

There is a correlation, which has long been noted, between the type of soil and the type of livestock. For example, the noted horse-breeding sections of the world are areas in which the soil is well supplied with lime and phosphate.

c. Topography. Topography affects the production of some crops more than that of others; and today topography is more important than formerly. In the days when agricultural production was carried on largely by means of hand tools, such as the hoe, the sickle, and the cradle, topography was not an important factor. With the advent of power-drawn equipment, such as the gang plow, riding cultivator, and reaping machine, rough land, which was formerly tilled, has gradually been abandoned or devoted to an entirely different type of production. Wheat at one time was grown on the hilly farms of New England, but it is now no longer grown as the principal crop in that region. The reason is that wheat lends itself admirably to machine methods of production in the stages of both seeding and harvesting; hence, other things being equal, wheat will be produced on level or gently rolling land rather than on rough land or steep hillsides. In general, and as a result of the introduction of power machinery, in either small or large units, much of the rough land formerly cultivated has now been abandoned or is devoted to crops that require the minimum amount of care or to some crops to which such modern machinery cannot be readily applied. Topography explains, in part at least, why wheat production in the United States

has shifted from the hilly terrain of New England to the level plains of the West.

Topography is important for another reason. The type of soil on steep hillsides may be such that it is especially subject to erosion. When this is the case, the land must be properly terraced, put in sod, or devoted to some crop that will protect the land from washing. Terracing generally affects the type of crop produced. That is, terraces are obstacles that interfere with the economic cultivation of crops; hence, other things being equal, land that is terraced will be devoted to those crops that require a minimum amount of care and are not adapted to use of modern farm machinery.

Livestock production is conditioned by topography. Some classes of livestock are better adapted than others to rough, hilly land or mountainous country. Sheep, as a rule, will do better than cattle on such land; and goats, still better than sheep. Hogs are not well suited to rough or hilly land.

2. Some economic determinants.

a. Variation in prices. This is one of the most important factors affecting the selection or choice of enterprises. Changes in the prices of farm commodities often are brought about by increased production. But this is only one force that causes prices to change. There may be, and often is, a marked change over a period of time in the demand for these products. Any such change, if it becomes permanent, will affect the choice by giving one enterprise an advantage over another. For example, when the methods of making synthetic fibers, such as rayon and nylon, were discovered and used to make products for which cotton fiber was previously used, the effect of this was transmitted to the demand for cotton. It is not certain just how much this change in demand has affected the price of cotton, but cotton producers generally are aware of the change and are beginning to plan changes in their cropping systems.

Changes in demand also are brought about by changes in the purchasing power of the consumer. Thus, when income possesses a high degree of purchasing power, the consumers may intensify their buying of certain goods, such as luxuries. When this is applied to farm products, oranges may command a relatively higher price than, say, potatoes. And if potatoes

are competing with small grain for the use of the farm resources, then potatoes may be given relatively less attention than small grains. In short, through the medium of demand the relative advantage of enterprise will change over a period of time.

b. Variation in production costs. Since it is the net income from enterprises that affects their choice, any change in cost, prices remaining the same, will also change their relative advantage. Examples of changes in cost that affect the relative profitableness are numerous. Mechanization is one of the most recent factors that affects the costs of producing farm products. In those cases in which the production processes can be either partially or wholly mechanized the cost per unit is reduced. If, then, the choice is between a product that can be mechanized and one that cannot, the former will be selected. The same thing applies to choice between two enterprises, one of which can be completely mechanized and the other only partially mechanized. In short, any device that affects the cost of one product more than another affects their relative advantage.

c. Changes in transportation rates. As a general rule, any change in transportation costs, such as arbitrary changes in freight rates or rate discrimination, affects the relative advantage of agricultural products. Changes in transportation costs, to effect or bring about changes in the relative advantage among farm products, would have to be discriminatory, that is, favor one product as compared to another. For example, a general rise or fall in freight rates would not affect this advantage, but a rise in the freight rates of commodity X, if the rates on Y were reduced or remained the same, would tend to give X an advantage over Y.

d. Availability of producing agents. The relative advantage of a farm enterprise may be determined by the abundance or scarcity of one or more of the producing agents. It may be true that the physical and other conditions of an area are well suited to the production of a given crop or livestock product, but such a crop or product may not be produced because it may require more capital than is readily available at a cost the farmers can pay. If such is the case, then a particular product requiring a relatively large outlay of capital will not be produced or will be produced only in limited quantities. As a rule, when funds are limited, the production will tend to run to annual

crops—such as corn, oats, and wheat—that will be realized upon in one year or less, even if other crops requiring more investment may be adapted to the region. For the same reason, hogs and poultry will be preferred to milk cows or beef cattle. Poultry may be added to the farm enterprises cheaply, and the returns may be realized quickly. Hog production requires about eighteen months before returns are realized. Milk cows and beef cattle usually require from two to three years before there will be any income derived from them.

Geographic Distribution of Types of Farming

It is the precise combination of physical, economic, social, and political forces that, at any given time, determines the types of farming and their location. Over a period of time types will and do change. But because physical forces play such an important role in determining types, the changes in their composition tend to take place rather slowly. This means that, in spite of the effect of economic, social, and political forces, the geographic distribution of the types of farming tends to remain fixed. It should not be overlooked, however, that minor changes in distribution are constantly taking place. In the following discussion this fact needs to be kept in mind.

1. General farms. This type of farm, which is highly diversified, is widely distributed throughout the United States. According to Elliott, who has made an exhaustive study of this subject,[4] general farms are "concentrated in the North Central and Middle Atlantic States, centering particularly in Ohio, Indiana, Southern Illinois, Missouri, Eastern Kansas, Nebraska, Southern Minnesota, Michigan, West Central New York, and Southeastern Pennsylvania. Other areas of rather heavy concentration occur in Kentucky, Central and Eastern Tennessee, Southwestern Virginia and in parts of Arkansas, Oklahoma, and Texas." As this authority points out, this type of farming is by no means uniform in character. There is, he reminds us, a wide difference in the enterprise combinations or systems of farming.

The general farms in Ohio have dairy, poultry, and livestock as their principal sources of income. In parts of Southern Indiana, Illinois,

[4] F. F. Elliott, *Types of Farming in the United States*, p. 48, United States Department of Commerce, Bureau of Census, 1933.

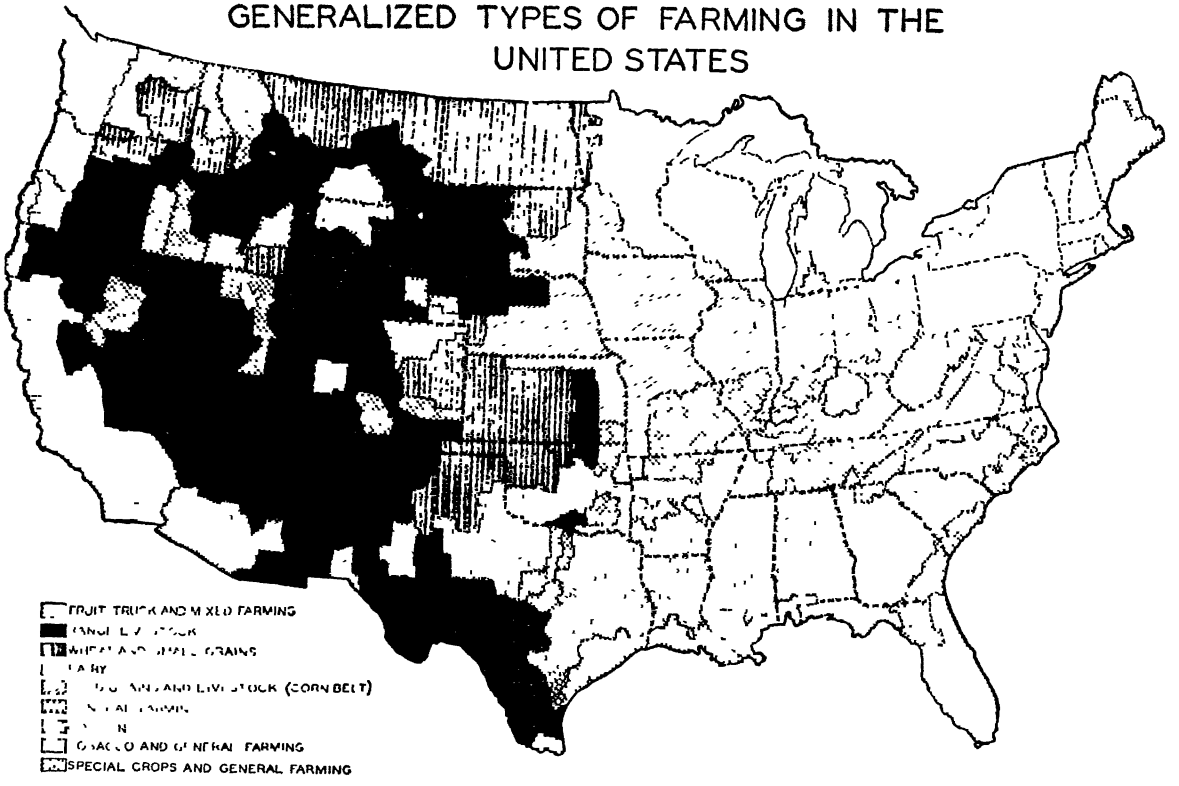
GENERALIZED TYPES OF FARMING IN THE UNITED STATES
FRUIT, TRUCK AND MIXED FARMING
SPECIAL CROPS AND GENERAL FARMING

FIG 13

Texas. Some cotton is produced under irrigation in California, New Mexico, and Arizona. The systems of farming in which cotton is the predominant crop vary widely in character. The table on page 94 shows southern agricultural economy.

4. Crop-specialty. This type of farming includes a wide variety of crops, and for this reason it is found distributed throughout the United States. The type will be found in those areas where the conditions provide a special advantage for the production of any one of the crops included in this group. The following tabulation indicates the location by states and major crops produced:

CROP SPECIALTY*

State	*Crop in 1948*†
Maine, Rhode Island	Irish potatoes
New Hampshire, Vermont	Forest (including maple)
Pennsylvania	Greenhouses (nursery)
Minnesota	Flaxseed
Virginia, North Carolina, Kentucky, Connecticut, Massachusetts	Tobacco
Nevada	Hay
Wyoming	Dry, edible beans
Louisiana	Rice

* Source "Farm Income Situation," United States Department of Agriculture, Bureau of Agricultural Economics, June, 1949

† The crop from which the state derived the largest cash receipts

5. Fruit. The desirable combinations of physical and economic conditions necessary for the successful production of

FRUIT*

State	*Rank in 1948*†			
	1	2	3	4
California	Oranges	Grapes	Peaches	Lemons
Delaware	Apples	Peaches		
Florida	Oranges	Grapefruit	Strawberries	
Massachusetts	Apples	Cranberries	Strawberries	
New York	Apples	Grapes	Strawberries	Cherries
Oregon	Pears	Strawberries	Apples	Cherries
Washington	Apples	Pears	Strawberries	Cherries
West Virginia	Apples	Peaches		

* Source "Farm Income Situation," United States Department of Agriculture, Bureau of Agricultural Economics, June, 1949

† Ranked according to cash receipts

fruits are usually rare, and for this reason this type of farming is highly localized. The major fruit-producing states are shown in the tabulation on page 95.

6. Truck. As in the case of crop-specialty, truck-farming includes a large number of different crops. This type of farming, although widely distributed, is found mostly in the states along or near the Atlantic coast, Gulf of Mexico, and in California. In the inland states truck-farming is usually located within easy reach of the large urban centers. The states in which truck crop farming is important and the major crops produced are:

TRUCK CROP FARMING[1]

State	*Rank in 1945*				
	1	2	3	4	5
California	tomatoes	lettuce	English peas	cabbage	fresh beans
Florida	fresh beans	tomatoes	cabbage	celery	English peas
Texas	tomatoes	cabbage	fresh beans	sweet corn	English peas
New York	sweet corn	English peas	fresh beans	cabbage	tomatoes
New Jersey.....	tomatoes	sweet corn	fresh beans	cabbage	English peas
Arizona..	lettuce	cabbage	tomatoes	English peas	fresh beans
Massachusetts..	sweet corn	tomatoes	cabbage	fresh beans	English peas
Colorado ..	English peas	tomatoes	cabbage	sweet corn	fresh beans
Connecticut	sweet corn	tomatoes	fresh beans	cabbage	English peas
Delaware	tomatoes	fresh beans	English peas	sweet corn	cabbage

* Source U S Census Releases for 1945, Series 1 (Ranked according to acreage)

7. Dairy. Since the conditions that are required for dairy farming are somewhat less exacting than those needed for other types of farming, dairying is carried on in every state in the Union. However, physical and economic conditions are relatively more favorable in some localities than in others. Dairying is found to be the chief type of farming in many sections of New York, Pennsylvania, New Jersey, Delaware, Maryland, Ohio, Indiana, Illinois, Wisconsin, Michigan, and Minnesota. For other parts of the United States, dairying is, for the most part, limited to those areas adjacent to large urban centers.

8. Poultry. Farms on which poultry and poultry products are the chief source of income are located mostly in the North Atlantic, East North Central, and Pacific Coast States. In recent years this type of farming has become common in some

of the South Atlantic States. The specific states in which poultry is an important farm enterprise are as follows: Pennsylvania, New York, California, Ohio, Illinois, Missouri, Indiana, Michigan, New Jersey, Delaware, Massachusetts, Washington, Maryland, Oregon, New Hampshire, Connecticut, and Rhode Island.

9. Animal-specialty. Livestock farms are most common in the East and in the West North Central States, particularly in Ohio, Indiana, Iowa, Missouri, Minnesota, eastern Kansas, and Nebraska. Texas and Oklahoma also produce livestock in large numbers. The chief livestock-producing states with the kinds of livestock produced are:

LIVESTOCK*

State	*Rank in 1948*†		
	1	2	3
Indiana	hogs	cattle	sheep
Iowa	hogs	cattle	sheep
Kansas	cattle	hogs	sheep
Minnesota	hogs	cattle	sheep
Missouri	cattle	hogs	sheep
Nebraska	cattle	hogs	sheep
North Dakota	cattle	hogs	sheep
Ohio	hogs	cattle	sheep
Oklahoma	cattle	hogs	sheep
South Dakota	cattle	hogs	sheep
Texas.	cattle	hogs	sheep

* Source "Farm Income Situation," United States Department of Agriculture, Bureau of Agricultural Economics, June, 1949.
† The classes of livestock, not the states, are ranked.

10. Self-sufficing. This type of farming is found in those areas somewhat remote from markets and where the resources are quite limited and of poor quality. The farm economy in the mountainous areas of eastern Kentucky and Tennessee and western North Carolina, the cut-over lands of Lake states, the New England States, Pennsylvania, southeastern Ohio, southern Illinois, and the Ozark regions of Missouri, Arkansas, and Oklahoma consists mostly of small self-sufficing farms. In other areas, especially in the South Atlantic States, this type of farming is quite common.

11. Abnormal. These types of farming are often of special

interest to the student of agriculture because they present, as a rule, a different set of problems from those types that have been discussed. In the case of abnormal farms, the problems, as a rule, do not center around the organization and operation of the farm but are apt to involve social and economic problems directly associated with the standard of living or the distribution of wealth.

Institutions or country estates are found usually near large urban centers.

Part-time farms are found near urban centers but are more numerous where the income per laborer is low or sub-normal, such as near mining, oil, and timber areas. Many part-time farms are found also in the southern Piedmont area where cotton manufacturing plants are located.

Boarding and lodging farms are located near resorts or in other areas that provide outdoor recreation facilities. The greater number are located in the New England States, in New York, New Jersey, Pennsylvania, in the Lake states, and in Pacific Coast states. These farms are beginning to appear also in many of the southern states where recreation facilities are being developed by the Tennessee Valley Authority and by the Departments of Conservation of the several states.

Forest products are found near or in heavily forested areas. Major areas of this type are the Lake states, New England States, New York, Pennsylvania, and all South Atlantic States. Less important areas are widely scattered but mostly located in Arizona and New Mexico.

Horse farms, feed lots, and livestock dealers. Farms used or associated with this type of farming are not very numerous and are found largely in the livestock-producing areas, or in those areas through which livestock pass on their way to market. There are a considerable number of horse farms in the Bluegrass Region of Kentucky and in parts of Virginia and West Virginia.

Questions

1. What is the major difference between a system of farming and a type of farming?
2. Name the major types of farming in the United States and indicate their geographic location.
3. State the "law of relative advantage" and the assumed condition under which it operates.

4. What are some of the factors that affect the relative advantage of agricultural products?
5 How would changes over a period of time in any of the factors involved in the production and sale of products affect the relative advantage of specific commodities from one area to another?
6. Select an area with which you are familiar and list the products produced in the order of their economic importance. Give your reasons for the order used.

References

Black, John D., and others, *Farm Management*, pp. 229-234. New York: The Macmillan Company, 1947.

Elliott, F. F., *Types of Farming in the United States*, United States Department of Commerce, Bureau of the Census, 1933.

Froman, Lewis A., *Principles of Economics*, pp. 708-713. Chicago: Richard D. Irwin, Inc., 1946.

Holmes, C. L., *Economics of Farm Organization and Management*, Chapter IV. Boston: D. C. Heath and Company, 1928

CHAPTER 7

Farm Management

AMONG the problems that arose to plague the farmer at the beginning of the commercial era none were more baffling than those relating to the organization and operation of the farm. These problems were rather simple when the farmer's major objective was to provide food, shelter, and clothing for himself and his immediate dependents. All of his efforts, his land, family labor, and such crude tools[1] as he employed were directed to the production of those things for which he knew the demand. But just as soon as he was face-to-face with the problem of producing things for sale rather than for use on the farm, he was at a loss to know just what to do. New and difficult problems arose, such as:

What to produce.
How much to produce of the various products that could be grown on his farm.
How to combine these various products so as to use labor and other resources of the farm to the best advantage.
How to produce products efficiently.
Where to market products.
Where and in what volume were supplies to be purchased.

These and a host of other problems bombarded the farmer's mind when he made his debut on the stage of commercial farming. And they have remained baffling questions even to this day. It is the purpose of this and the following three chapters to indicate how the farmer in our commercial world can use his resources of land, labor, capital, and management to the best advantage at the farm level.[2]

[1] Hand tools were used until about 1850.

[2] The student should review the section in Chapter 2, on "Problems of Agriculture" as to the difference in the approach to production at the farm and sector levels.

Organization and Management

It is necessary, before considering how a farm should be organized and managed, to understand what these words mean.

1. Organization. Organization is the manner in which the resources of the farm, such as land, labor, and equipment, are arranged for the purpose of production. It can be said that a farm is well organized when the land area is properly allocated to the several crops or livestock enterprises that are a part of the business. Again, a farm can be said to be well organized if, in addition to the proper allocation of the land, the correct amounts of labor, materials, and machinery have been apportioned to producing and harvesting the crops and to the care of livestock enterprises.

2. Management. Management has to do with the actual operation, not the organization, of the farm. The two, of course, are related. It would be impossible to manage a farm that was not organized. But the two functions that the farmer has to perform are different. Management means to direct operations, to make day-to-day decisions as to what should be done on the farm.

Farm Organization and Management Functions

The essential difference between organization and management may be clarified by listing the specific tasks that the farmer must do when he acts as an organizer and when he is performing the managerial function.

1. Organizer. As an organizer, the farmer is concerned chiefly with the following tasks:

a. Choosing the factors of production. This task has to do with the selection of the farm, which may include buying or renting in the event that the farmer is not already an owner. It includes the selection of specific laborers and the determining of the amount of labor needed. The farmer must also select the type or types of machinery and equipment to be used in operating the farm.

b. Selecting farm enterprises. Usually this task involves the selection of both crop and livestock enterprises and the combination of these into a system of farming.

c. Determining the physical layout of the farm. When a farmer has selected and acquired the factors of production—land, labor, and capital—and has selected the crops and livestock enterprises, he must devise a specific farm layout. This will include the arrangements of the fields, their size and shape, the type, arrangement, and location of farm buildings, including the farm dwelling.

d. Providing a system of records and accounts. Since modern farming is largely a business undertaking, the organizer must provide some system of records and accounts by which the results of operating the farm can be recorded correctly. The analysis of these records, as will be discussed later, is the task of the manager, but the organizer must provide the system by which the records are kept.

2. Manager. The farmer, when he acts as a manager, is concerned with performing those tasks that keep the business operating at top speed. Specifically these tasks fall into the following major classes:

a. Selecting the technical practices to be used in producing the various crops or classes of livestock products. In the case of crops these practices would include preparing the land, seeding, use of fertilizer, and harvesting crops. For livestock they would include the selection and application of breeding, feeding, medical treatment, and grooming practices.

b. Selecting, training, and supervising farm labor. These are different but related tasks. In selecting laborers to work on the farm, the manager must keep in mind that the several jobs to be done on the farm may require laborers possessing widely different skills, intelligence, and training. But since farming is not an occupation to which a division of labor can be applied easily, the manager must consider the adaptability of laborers to different tasks, and their power to absorb instruction or to understand and grasp new and different ways of doing tasks. This characteristic of labor is important because the manager must train his laborers to do things in the most efficient manner. If, for any reason, a laborer cannot absorb such training or is not teachable, then such a laborer becomes useless or at best will do only mediocre work.

Supervision of labor refers to those activities that have to do

with getting the farm work done. These include such things as getting the laborers to work at the right place on the farm at the right time, keeping each laborer doing the work he is supposed to do, and keeping him or her busy. Supervision does not mean driving the laborers at top speed throughout the day; rather it means setting a normal or an efficient pace that the laborers can maintain and, at the same time, get the maximum work done. Neither does this mean working laborers more than the normal number of hours per day. More hours per day does not mean necessarily more work per day.

To supervise labor most effectively requires the creation and maintenance of an *esprit de corps*, or that willingness among labor that will result in getting the most work done with the least effort. To do this, the manager must study each laborer and devise methods by which he can secure and keep his goodwill.

c. Controlling and directing physical resources. The manager must control and supervise not only labor but also the physical resources of the farm—land, machinery, and buildings. Each of these must be maintained in such condition as to make its maximum contribution to the farm business. Land must be prevented from eroding, and its productivity must be maintained. Machinery must be kept in condition to do maximum work. This is true of farm power, whether it be horses, mules, or tractors. Buildings must be kept in good repair and clean, for cleanliness is necessary to profitable production.

d. Adjusting farm operations. It often occurs that plans must be changed from time to time to meet specific situations. For example, it may happen, indeed often does happen, that the labor schedule or plan for a given day must be changed because of weather conditions. Machines often "break down" and need repair. A change in the type of feed and feeding methods and practices may be advisable if feed prices change relatively to each other during the feeding period. If the price of one feed gets too far out of line with another, this may require a change in the feeding ration so that more of the cheap and less of the expensive feed can be used. The needs for these and other adjustments are constantly arising and it is the function of the manager to make these adjustments quickly and as effectively as possible.

e. Preparing plans for the over-all operation of the farm. The supervision of labor and physical resources of the farm will demand the creation of a general scheme or plan for doing things from day to day and from season to season. It may be highly desirable for the manager to prepare a work schedule or calendar of operations that will serve as a guide in getting the farm work done at the right time. It may also require specific plans for specific jobs on each of the major farm enterprises. If plans are not available or if they are made on the "spur of the moment," they may not be very effective. What is usually needed is a well-conceived plan, prepared in advance, for doing all of the major farm tasks. A manager who has such plans and who can put them into effect will be able to maximize his net income.

f. Keeping farm records and accounts. Every well-managed farm should have a set of farm records and accounts. These records and accounts are the means of testing the organization and operation of the farm. They provide information that can be used in changing the organization; they show the methods used in operating the farm; and, since they reveal the net income or net loss for the farm as a whole, they indicate where gains or losses occurred. Armed with this knowledge, the manager can improve the set-up of the farm, or change his practices or methods of management so as to use all of his resources to the best advantage.

Qualifications of a Good Farmer

It is, no doubt, obvious to the reader that the organization and operation of a farm under modern conditions is a task of the first magnitude. It can no longer be said that anyone can farm. To organize and operate a farm successfully the operator must possess certain distinctive qualifications. He must have farm experience. It is difficult, if not impossible, for a person who has had no farm experience as a boy or as a young man to become a successful farmer. If such a person wishes to become a farmer, he should first get the necessary farm experience by working as a hired man under the direction of a good farm manager and then by operating a farm for several years as a tenant.

In addition to farm experience, a successful farmer must

have a knowledge of modern farm machinery. He need not be a mechanic, but he must know what modern farm machinery can do and how machines may be used in the production and marketing of farm products. Since the production of crops and livestock rests today on scientific information, the farmer must have, as a minimum, a working knowledge of agronomy and animal industry. Specifically, he must know the requirements of crop and livestock production, the kind of seed, the kind and amount of fertilizer, and the practices to use in growing the crop. For livestock he must know the types or classes of workstock that are best suited to specific conditions; how they should be fed, and how they should be housed to get the best results.

However, the farmer is not concerned solely with the problems of production. This was true when farming was solely self-sufficient, but today farming is a business. For this reason the farmer must be a businessman. He must know, at least, the rudiments of farm accounting so that he can keep farm records and accounts. He must have a knowledge of the markets on which he intends to sell his products and know how to buy and sell effectively. In most cases, the modern farmer uses borrowed funds. He should know, therefore, the sources of credit, how much money to borrow, and what rate of interest to pay. Finally, he must understand the techniques used in the organization and operation of the farm. Unless the farmer knows all of these things, his farm will be organized in a crude fashion and operated inefficiently, and as a farmer he will be a failure. The solution to farm management problems, then, is a broad knowledge of technical and practical agriculture combined with business ability. Such a combination invariably means success.

Questions

1. Define organization and management as used in farming.
2. What tasks must the farmer do as an organizer? as a manager?
3. Make a list of technical practices.
4. What is involved in training and supervising labor?
5. Indicate what a farmer does in making an over-all plan for his farm.
6. Why are farm records important?
7. What are the qualifications of a good farmer?

References

Black, John D., and others, *Farm Management*, Chapter I. New York: The Macmillan Company, 1947.

Boss, Andrew D., and Pond, George A., *Modern Farm Management*, Chapter XII. Saint Paul: The Webb Publishing Company, 1947.

Forster, G. W, *Farm Organization and Management*, Rev. Ed., Chapter IV. New York: Prentice-Hall, Inc , 1946.

CHAPTER 8

Farm Organization

THE FARMER, insofar as organization of his farm is concerned, is confronted with two major problems. He must decide what crops and livestock enterprises should be included in his production scheme and how much land, labor, equipment, and management should be assigned to or used on each enterprise. When these two questions have been answered, the farmer will have the framework of a farm organization.

Some Factors Affecting the Selection of Farm Enterprises

The selection of enterprises is affected by a number of factors. Some of these are physical, such as climate, soil, and topography; others are economic, such as prices and costs; still others are the result of a combination of both physical and economic factors. This is especially the case in what is called here "the relationship between enterprises."

1. Physical factors. Most farms are adapted to the production of several crops, livestock, and livestock products. This is one of the reasons why the problem of selection is often so difficult. If a farmer could use all his resources in the production of one product, the problem of selection would never arise. The farmer would specialize in production. But because of differences in soils, topography, and other physical conditions, which may, and usually do, exist on each farm, and because of seasonal differences in climate, which always exist, the farmer seldom if ever can specialize in production. On the contrary, if he is to use his resources effectively, he must diversify. This means that he must select from a number of enterprises those which, when associated in a farming system, will produce the maximum net income.

2. Economic factors. Physical conditions, as they relate to a specific farm, are not the only factors that affect the farmer's choice of enterprises. He will have to consider relative prices

of farm products and production costs. For example, a given farm may be well adapted, insofar as the physical factors are concerned, to the production of a given crop. Suppose, however, that the price of this product is low relative to some other crop that can be produced on the farm, although it may not be so well adapted to the physical conditions that prevail. Under this situation the farmer must decide whether or not to produce the crop that is best adapted or to grow the crop that is not so well adapted to the physical conditions. His choice will depend on which of these two products will yield the maximum net income and not solely on the basis of physical adaptation.

3. Relationship between enterprises. Of major importance in the selection of enterprises is the variation in the relation that one enterprise bears to another. Some enterprises that may be available to the farmer *compete* for his available resources. For example, in many parts of the South, cotton, tobacco, and corn compete for the farmer's time in planting but not seriously in harvesting, since tobacco must be harvested much earlier than cotton or corn, both of which have longer harvesting periods than tobacco. In areas where potatoes are the principal crop, corn, apples, truck crops, and field beans may, and usually do, compete with potatoes for the labor and other resources of the farmer. In some irrigated areas of the West sugar beets, field beans, and potatoes compete with each other.

Enterprises may be noncompetitive or *supplementary*.[1] Supplementary relations take several forms. Some plants feed deeply, whereas others tend to be shallow feeders. If deep and shallow rooted crops can be grown in rotation, it is possible to secure a better utilization of the various elements in plant food that they utilize. A better utilization of all the available elements may be brought about if crops that have different plant-food requirements can be grown in rotation. When two or more crops can be grown on the same land at the same time, or in the same season, there may result a more complete use of the land. This may sometimes be true when a young orchard is planted to truck crops. The production of truck crops does

[1] G. W. Forster, *Farm Organization and Management*, Rev. Ed., pp. 55-58. New York: Prentice-Hall, Inc., 1946.

not, as a rule, interfere in any way with the development of the trees; on the contrary, their cultivation may reduce the cost of developing the orchard. In some areas two crops may be grown on the same land at different times in the same season. For example, in the cotton belt, soybeans or cowpeas may follow oats cut in June.

The addition of supplementary enterprises to the farm may be a means of more effective utilization of labor. The inclusion of dairy cattle, for example, may provide a better utilization of family labor. The dairy herd might not be profitable if all the labor had to be hired. However, when the labor is furnished by the farmer's family, the dairy herd furnishes a means of marketing the family labor. A wood crop added to the system of production may utilize more completely the farm labor and equipment. A crop can be harvested when the labor and equipment are not required for field crop or livestock production. The cleaning and disinfecting of seed on the farm during the winter in preparation for planting in the spring would be a supplementary activity. In this same category would also fall the care and repair of machinery and buildings during the slack periods of the year.

As a general rule, the main or principal farm buildings may be used jointly by several crop and livestock enterprises. If production is highly specialized, it may mean that some of the building space is not used at all, or used only part of the year. It is sometimes possible under such conditions to include in the farm organization an enterprise that would use the buildings more completely.

Farm machinery may be utilized more completely by the addition of one or more supplementary enterprises. This is especially true of farm machinery that is not highly specialized, such as harrows, plows, and discs. The addition of one or more crops to the farm organization may, therefore, effect a better utilization of such implements and machines.

The choice of enterprises may depend also on what is called "complementary" relations. When this relationship exists, one enterprise contributes in some way to the productiveness of another.

It is often feasible to add livestock to the farm organization for the purpose of utilizing unmarketable products, such as

roughage, pasturage, damaged grain, or other crops that ordinarily cannot be directly marketed at a profit. One type of livestock may be added to the farm for the purpose of consuming products that otherwise would be wasted by another class of livestock. Hogs are often added to the farm for the purpose of utilizing the corn wasted by steers when the steers are fed in the dry lot. One class of livestock may be added to the farm to consume the product of some other enterprise. For instance, hogs or poultry may be added to consume skim milk produced on farms where cream or butter is sold.

Methods of Selecting Enterprises

A number of methods have been devised that are intended to help the farmer select those enterprises that are best suited to his farm and that will result in obtaining maximum net income. Four of these will be described and the merits of each discussed.

1. Gross value. The gross value per unit has been suggested. That is, of two crops, the one giving the largest gross income per acre should be selected. There is something attractive about this idea. Since the gross value is large, the faulty conclusion is reached that the net returns per acre must also be large. But a moment's reflection is sufficient to show that this may not be the case, for the expense of production may

TABLE 4

RELATION BETWEEN NET INCOME AND GROSS INCOME PER ACRE ON SELECTED CALIFORNIA CROPS*

Crop	*Gross Returns*	*Returns over Operating Costs*	*Per Cent Net Is of Gross Returns*
Orange	$345 0	$115 0	33 33
Walnut	310.0	200.0	64.51
Prune	480.0	340.0	70.83
Peach	390 0	265 0	67.94
Pear	375.0	130 0	34.66
Rice	137 5	65.0	47.27
Sugar Beets	135 0	75.0	55.55
Grain Sorghum	36.0	14 0	38.88
Wheat	25.0	13 0	52.00
Sweet Potatoes	180.0	85.0	47.22
Tomatoes	230 0	62.5	27.17
Potatoes	110.0	34.0	30.91

* Source: From *Farm Management* by R L. Adams, p 33 New York McGraw-Hill Book Co, Inc., 1921.

also be large. Table 4 shows the relation of gross income to net income per acre for a number of crops. In some cases the gross income per acre is large, but the net income is relatively low. In short, there is no necessary relation between gross and net income. Hence, gross value per acre, or per unit of any other factors of production, is not likely to be a satisfactory basis of selecting farm enterprises.

2. Total net returns. Since the gross returns from an enterprise ignore costs, the net return from an enterprise has been used as a basis of selection. The difficulty of using net returns as a guide in selection is indicated in the data in Table 5, show-

TABLE 5

NET RETURNS PER ACRE AND PER HOUR OF MAN LABOR FROM OATS, CORN, AND TOBACCO ON A WISCONSIN FARM*

Crop	*Net Return Per Acre*	*Net Return Per Hour of Man Labor*
Oats	$ 6 90	$ 27
Corn	18 50	.75
Tobacco	48 50	41

* Source *Journal of Farm Economics*, Vol 5, No 2 (April, 1923), p 68

ing the returns per acre and the returns per man hour for oats, corn, and tobacco. If choice were to be made on the basis of net returns per acre, oats would be eliminated. That is, the net return per acre for oats is $6.90, as compared with $18.50 for corn and $48.50 for tobacco; but if the oats were eliminated, no doubt the net returns from the farm as a whole would be less. The reason for this is not difficult to discover. The oat crop at no time during the year seriously conflicts with either of the other two crops. In reality then, oats supplement corn and tobacco production. That is, by growing oats, even if they are less profitable than corn or tobacco, resources are utilized at a time when they are not needed for the production of the other two crops.

Nor is this all. Complementary features may also render the net returns per unit invalid. Some enterprises may have by-products that would be of no value unless utilized on the farm. A good illustration of this is found in dairy production in areas removed somewhat from large cities. The manure

produced by the dairy herd is a by-product and may be used in the production of crops that would not normally be grown unless manure were available. These crops may add materially to the net income of the farm as a whole.

3. Net returns per unit multiplied by the number of units one man can operate. Net returns per unit multiplied by the number of units one man can operate appears as a more reliable basis of enterprise selection than the net returns per unit. This idea arises out of the fact that, whereas one enterprise may indeed be more profitable than another, it also may be true that more units of the less profitable enterprise can be produced per man. Thus, for the two to be reduced to a comparable basis, the net returns per unit in each case should be multiplied by the number of units one man can operate. If one man can operate 5 acres of tobacco or 40 acres of corn, then the net returns per acre should be multiplied in the case of tobacco by 5 and in the case of corn by 40, or, what amounts to the same thing in this case, the returns for corn per acre should be multiplied by 8. For example, in Table 5, the net return per acre for corn is $18.50 and for tobacco $48.50. If $18.50 is multiplied by 8, then the basis of comparison would be $148 for corn and $48.50 for tobacco. Evidently corn is more profitable than tobacco.

But the assumption that, for each acre changed from tobacco, corn can be increased 8 acres does not square with the facts. Although it may indeed be true that a given farmer could operate 8 acres of corn for each acre of tobacco, in any given case a reduction of 1 acre of tobacco cannot be accompanied by an increase of 8 acres of corn unless the farmer increases the size of his farm. Normally a reduction of 1 acre in one crop means an increase of 1 acre in some other crop. To increase the size of the farm in order to grow more corn in place of tobacco is not so much a problem in selection as it is in determining the size of the farm. On a large farm the problem of whether or not the farmer should grow tobacco or corn would still remain to be solved.

Furthermore, this method does not consider the effect on income of supplementary or complementary features that the crops may possess. For example, corn may be fed to livestock, and the combination of corn and livestock may be more profit-

able than either one alone. One crop, such as tobacco, may conflict with some other crop, such as the small grain, whereas corn would be supplementary. The effect of corn-livestock combination on soil fertility would be a factor affecting choice. Obviously net returns per unit multiplied by the number of units one man can operate is not a reliable method to use.

4. Net returns per hour or day of man labor. The net returns per hour or day of man labor has been advanced as one of the most satisfactory methods of selecting enterprises. This means, of course, that of two enterprises the one returning the highest

TABLE 6

RETURNS PER MAN HOUR IN THE CASE OF COTTON AND CORN[1] †

Cotton		*Corn*	
Credit		*Credit*	
By cotton, 414 lb lint @ 19 4¢	$80 32	By pork, 457 lbs @ 10 2¢	$46 61
By cotton, 735 lb. seed @ 1 5¢	$11 02		
Total	$91 34		
Debit		*Debit*	
To cost of production (Cost of ginning not included) Including 15 15 days man labor	$54 42	To cost of producing corn.	$22.41
		To cost of supplement.	$ 5 44
		Total	$27 85
		Including 3 73 days man labor	
Profit per acre	$36 92	Profit per acre	$18 76
Profit per day of man labor	$ 2 44	Profit per day of man labor	$ 5 02

* Source *North Carolina Extension Folder No 26*

† The labor devoted to the production of one acre of cotton was sufficient to produce four acres of corn The value of the manure ($7 42) is considered ample return for the labor of feeding the hogs

net returns per hour of man labor should be chosen. This method overlooks the fact that there is considerable variation among enterprises with respect to their demand on the resources of the farmer. Two enterprises might, indeed, return two different rates per man hour or per day, and, if these two enterprises do not seriously compete for the time or other resources of the farmer, it would undoubtedly be advisable to include both in the enterprise combination of the farm.

An example of the error that is likely to be made in using the net return per man hour as a basis of selecting enterprises is illustrated by the data in Table 6. This table shows that on

the basis of net returns per day for man labor, corn, when fed to hogs, is more profitable than cotton, when cotton is worth 19.4 cents and pork 10.2 cents per pound. The net return per day of man labor on cotton is $2.44, as against $5.02 for corn when fed to hogs. Do these data mean that corn and hogs should replace cotton? The question, of course, must be answered in the negative. Cotton and corn can both be produced on the same farm. They conflict to some extent, but not seriously. It will be noted that on the acre basis cotton is more profitable than corn. Assuming that for each acre cotton is reduced, an acre of corn is substituted, it is obvious that the net returns from the farm will be reduced as cotton is eliminated. The labor required to produce one acre of cotton in this case is sufficient to produce four acres of corn. This does not mean anything unless the farmer can increase the size of his farm; but, as already observed, this is a different problem.

The Principles of Allocating Farm Resources

The methods discussed, although they may be helpful, are largely negative and do not answer the question of how the enterprises should be selected and combined to form an effective system of farming. The nature of this problem may be better understood if reference is made to the basic law of diminishing returns. This law may be stated as follows: *When a variable factor* (for example, fertilizer) *is applied to a fixed factor* (for example, land), *the production per acre will increase but at a diminishing rate.*

In Table 7 are presented data derived from an actual experiment, the object of which was to determine how the production of cotton would be affected by increasing applications of a mixed fertilizer. The first two columns give the physical basis of the experiment from which data in the remaining columns are derived. In Column 1 are the inputs of fertilizer per acre; and in Column 2, the outputs of seed cotton in pounds. It is impossible to determine the allocation of the fertilizer to land unless the physical inputs and outputs are converted into values. For this reason the output has been expressed in values by multiplying the cotton poundage by 10 cents per pound. The results of this multiplication are shown in Column 3. The cost of fertilizer is shown in Column 5. This cost has been obtained

by multiplying the data in Column 1 by $2, or at the rate of $40 per ton. In Column 4 is given the value of the added cotton produced from additional inputs of fertilizer. For example, in Row 0, Column 4 is $50, which means that this is the value of cotton over no cotton at all; whereas in Row 1, Column 4 is $11.50, which is the increase in value of cotton produced, when the first 100 pounds of fertilizer is applied, or the difference be-

TABLE 7

THE EFFECT ON RETURNS FROM COTTON WHEN AN ATTEMPT IS MADE TO INCREASE PRODUCTION BY THE APPLICATION OF FERTILIZER*

1	2	3	4	5	6	7	8
Inputs of Fertilizer (Unit, 100 lb)	*Outputs of Seed Cotton per Acre (lb)*	*Value of Output at 10¢ per Pound*	*Additional Value of Cotton*	*Cost of Fertilizer at $40 per Ton*	*Additional Cost of Fertilizer*	*Value of Cotton Less the Cost of Fertilizer (3-5)*	*Successive Net Returns (4-6)*
0	500 0	$ 50 00	$50 00	$ 0 00	$0 00	$ 50 00	$50.00
1	615 0	61.50	11 50	2 00	2 00	59 50	9.50
2	719 0	71.90	10 40	4 00	2.00	67.90	8.40
3	812 5	81.25	9 35	6 00	2 00	75 25	7.35
4	895 5	89.55	8.30	8 00	2 00	81 55	6.30
5	969 5	96.95	7 40	10 00	2.00	86 95	5.40
6	1,037.0	103.70	6 75	12.00	2.00	91 70	4.75
7	1,096 0	109 60	5.90	14 00	2 00	95.60	3.90
8	1,148 5	114.85	5 25	16 00	2.00	98 86	3.25
9	1,195 0	119 50	4 65	18.00	2.00	101 50	2.65
10	1,235 0	123.50	4 00	20 00	2.00	103.50	2.00
11	1,269 5	126.95	3 45	22 00	2.00	104 95	1.45
12	1,299 0	129.90	2 95	24 00	2 00	105.90	.95
13	1,324 0	132.40	2 50	26 00	2 00	106 40	.50
14	1,344 0	134.40	2 00	28.00	2 00	106 40	.00
15	1,360 0	136.00	1 60	30 00	2.00	106 00	−.40
16	1,361 0	136.20	1 20	32.00	2.00	105.20	−.80

* Source. Adapted from South Carolina Experiment Station *Bulletin No 219*, March, 1924.

tween $50 and $61.50. All of the remaining items in Column 4 are derived in a similar manner.

The additional cost of fertilizer is shown in Column 6 and is constant at $2. The difference between the gross value of cotton as given in Column 3 and the total cost of fertilizer as given in Column 5 is the net value of cotton above the cost of fertilizer. These data are given in Column 7. For example, in Row 0 the value is $50 because no fertilizer has been used,

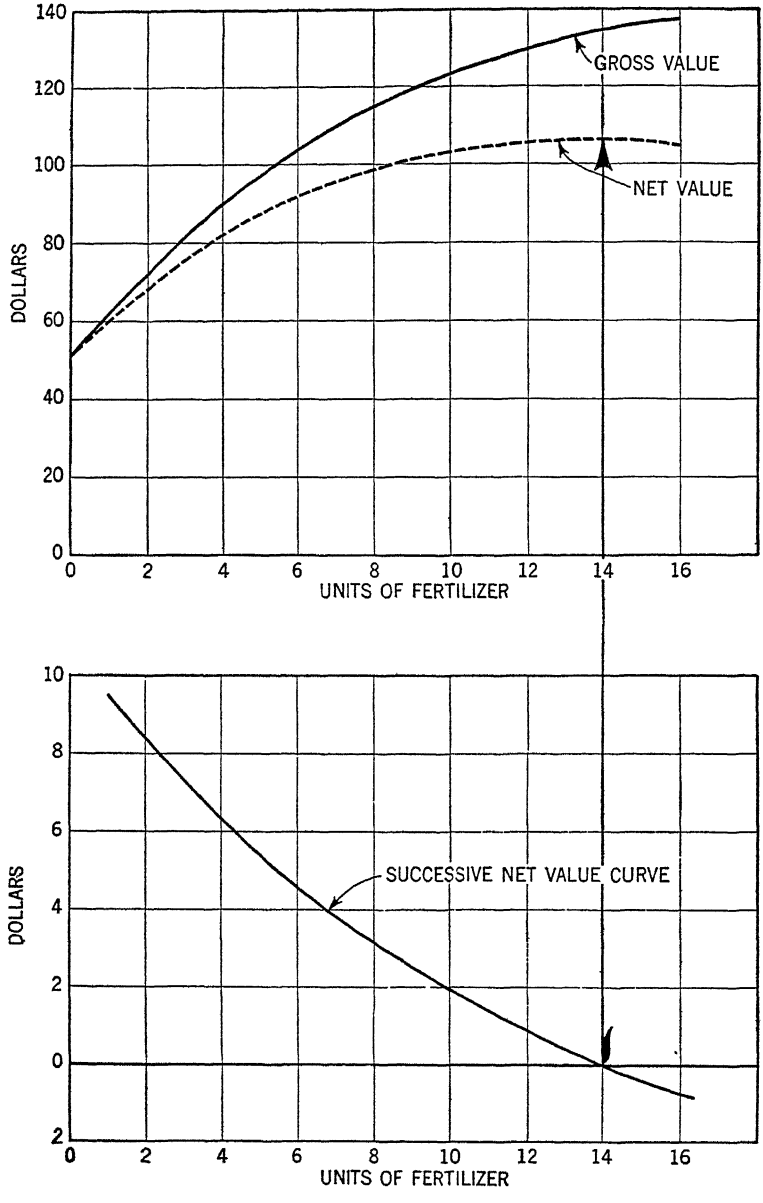

FIG. 14. THE EFFECT ON GROSS AND NET RETURNS FROM ONE ACRE OF COTTON WHEN AN ATTEMPT IS MADE TO INCREASE OUTPUT.

but in Row 1 the result is $59.50, which is derived by subtracting $2, the cost of fertilizer, from $61.50, the value of the cotton produced. The same procedure is followed in obtaining the data in all of the other rows of Column 7. Finally, the data in Column 8, the successive net returns, are obtained by subtracting the data in Column 6 from those in Column 4.

The essential parts of the information presented in Table 7 are shown in Figure 14. The units of fertilizer (the variable factor) are plotted from the horizontal axis; and the values, from the vertical axis. There are three curves: the first one, the gross value curve, is obtained by plotting the data in Column 3 against the data in Column 1; the second is the net value curve, which shows the coordinate points of data in Column 7 and Column 1; and the third, or successive, the net value or marginal net returns curve. This latter curve is shown on an enlarged scale in order to make it somewhat more legible.

The question may be asked, "How far would it pay a farmer, operating under these conditions, to apply fertilizer per acre in the production of cotton?" In this case the only cost considered is that of fertilizer. This being so, it is evident that the farmer will be justified in applying not more than 14 units of fertilizer to each acre. It is this amount that gives the maximum net returns, and it is at this point also that the added value of cotton is equal to the added cost (compare Column 4 and Column 6, Row 14). Hence, the maximum net returns are obtained when the added value is equal to the added cost.

The reader may be perplexed that inputs of fertilizer 13 and 14 (Table 7) give the same maximum net returns, namely, $106.40, whereas the added value of cotton over input 12 is $2.50 and the input of fertilizer is $2.00. This discrepancy is at variance with the principle of marginal net returns, according to which maximum net return is attained only when the added value is equal to the added cost. This condition is fulfilled in combination 14. The discrepancy between combinations 13 and 14 may be explained by stating that the unit of input, 100 lbs. of fertilizer, is too large. If these inputs were very small, there would be only one combination of inputs instead of two at which net returns would be maximized. This can be demonstrated by calculating the net returns midway between 13 and 14. At this point the output of cotton is

1,335 lbs., the added value over 13 is \$1.10 (for example, $1{,}335 - 1{,}324 = 11 \times 10¢$), the added cost is \$1.00 for fertilizer, and the net return is \$106.50. There is still a difference of 10 cents between the added value \$1.10 and the added cost of \$1.00. If the inputs were exceedingly small, the added value and the added cost would approach equality and the net returns would be maximized at 14 units of inputs.

Rules for the Selection and Combination of Farm Enterprises

The following rules, based on the principle that has been discussed, may be used as guides for the selection and combination of enterprises.

Rule 1. When the farmer's resources can be fully used in the production of one enterprise, develop this enterprise until the marginal net returns for the last unit is equal to zero.

This rule is illustrated in Figure 15. The vertical scale represents the marginal net returns and the horizontal scale,

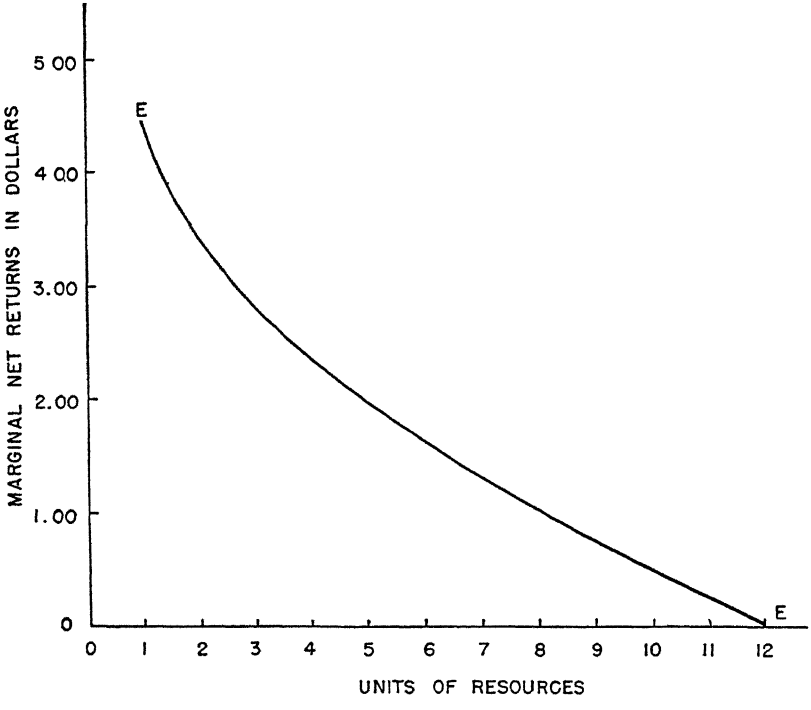

FIG. 15. HOW THE FARM RESOURCES WILL BE USED WHEN THEY CAN BE FULLY UTILIZED ON A SINGLE ENTERPRISE.

the units of resources used. It is assumed that the farmer has sufficient units of inputs at given costs to push the production to the point where marginal income is equal to marginal costs.

Rule 2. When the farmer's resources must be used on two or more supplementary enterprises, the resources should be so distributed among these enterprises so that the last unit of resource expended on each will yield the same marginal net

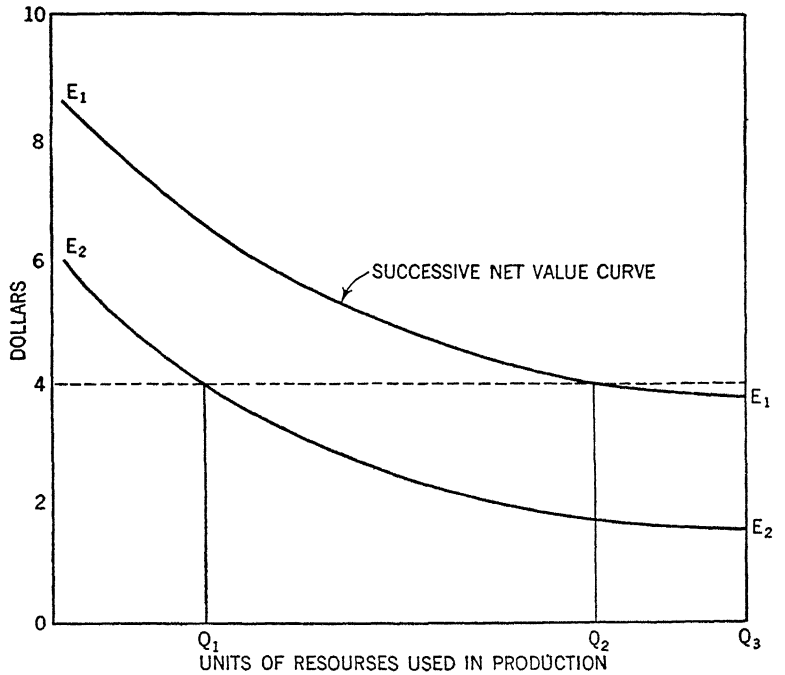

FIG. 16. HOW THE FARM RESOURCES WILL BE ALLOCATED WHEN TWO ENTERPRISES ARE PARTIALLY SUPPLEMENTARY

returns, irrespective of the enterprises on which the resources are used. In this case it is assumed that the resources of the farmer are fixed, and he, therefore, has the problem of how to use his limited resources to the best advantage—that is, to obtain the maximum net returns.

This rule is illustrated in Figure 16. In this case enterprises E_1 and E_2 may be expanded to the point when all of the fixed supply of the resources are used. But the problem is to distribute the available supply of resources between these two enterprises so as to get the maximum net returns. The prob-

lem is solved by using OQ_1 resources on enterprise E_2 and OQ_2 resources on enterprise E_1. It will be observed that OQ_1 plus OQ_2 is equal to OQ_3, or the total resources available. There is no other distribution of the resources that will give equal marginal returns[2] and, consequently, none that will give maximum net returns.

Rule 3. When the farmer must choose between two or more enterprises, one of which possesses complementary features, then the complementary enterprise should be developed until the marginal net returns for the last unit of resource used on the complementary enterprise is equal to the marginal net returns on the supplementary enterprise.

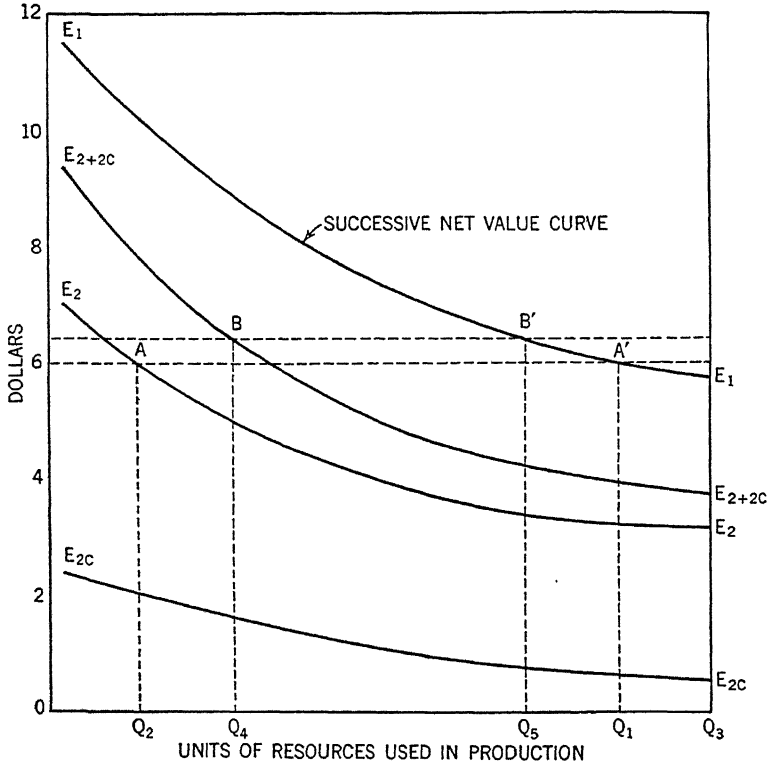

FIG. 17. HOW THE FARM RESOURCES WILL BE ALLOCATED WHEN ONE OF A NUMBER OF PARTIALLY SUPPLEMENTARY ENTERPRISES HAS POTENTIAL COMPLEMENTARY FEATURES.

[2] If the resources were unlimited, the greatest net returns would be obtained when the marginal net returns were zero.

This rule is illustrated in Figure 17. If E_1 and E_2 alone are considered, then the resources should be distributed as in Figure 16. In this case OQ_1 is used to develop E_1, and OQ_2 is allocated to E_2. If, however, E_{2c}, a complementary enterprise to E_2, is considered, then E_2 plus E_{2c} may be drawn, which is the sum of E_2 and E_{2c}. In this case OQ_4 resources will be used on E_2 plus E_{2c} and OQ_5 units on E_1. For it is when this distribution of resources is employed that the marginal net returns for the last unit is equal for all enterprises, and this distribution will give maximum net returns for the resources available.

Note on Theory of Equi-Marginal Net Returns

The validity of the equi-marginal net returns principle is subject to proof. Suppose a farmer has ten units of resources that are available for the development of two enterprises, E_1 and E_2. The problem is to prove that the maximum net return from these ten units will be obtained when they are so allocated that the marginal net returns for the last unit applied to E_1 will be equal to the last unit applied to E_2, assuming that the following differential data are available for both enterprises:

	Marginal Net Returns		*Total Net Returns*	
Inputs	E_1	E_2	E_1	E_2
0	0	0	0	0
1	$5.20	$3.50	$ 5.20	$ 3.50
2	4.60	*3.00*	9.80	6.50
3	4.18	2.72	13 98	9.22
4	3 84	2.17	17.82	11.39
5	3.58	1.97	21.40	13.36
6	3 33	1.84	24 73	15.20
7	3.16	1.70	27.89	16 90
8	*3.00*	1.46	30.89	17.36

According to these data, the marginal net returns vary from $5.20 on E_1, when the first unit is used, to $3, when the eighth unit is employed. For E_2 the variation is from $3.50 to $1.46. Total net returns for any given input is obtained by adding the successive marginal net returns; for example, the first unit used on E_1 is $5.20, and the second unit, $4.60. These two ($5.20 + $4.60) equal $9.80, which is the total net returns when two units have been used. (See also Table 7, Col. 8.) An

examination of these data shows only two points where the marginal net returns are equal, namely, \$3 when the eighth unit is applied on E_1 and when the two units are applied on E_2, according to the theory that the maximum net returns should be obtained when eight units are used on E_1 and two units are used on E_2. That this is correct may be shown by checking the net returns from this combination of inputs with any other combination. This comparison is as follows·

1 10 units of resources. $8\,E_1 + 2\,E_2$ = \$37 39 ($30.89\,E_1 + 6.50\,E_2$)
2 10 units of resources: $6\,E_1 + 4\,E_2$ = \$36 12 ($24.73\,E_1 + 11.39\,E_2$)
3 10 units of resources: $4\,E_1 + 6\,E_2$ = \$33.02 ($17.82\,E_1 + 15\,20\,E_2$)
4. 10 units of resources: $2\,E_1 + 8\,E_2$ = \$27.16 ($9\,80\,E_1 + 17\,36\,E_2$)

Practical Approaches to the Problem of Enterprise Combination

The rules that have just been discussed, although theoretically correct, are not directly applicable to farming, because increment data for various enterprises are not available. This situation has forced the agricultural economist to develop what may be called "practical approaches" to the problem of selection and combination of enterprises. It will not be necessary to enter into an extended discussion of these methods since they are usually considered in detail in courses in Farm Management.

1. Farm budgeting. One of the most useful of these methods is called "farm budgeting," which provides for the development of a number of enterprise combinations for a specific farm. For each combination the gross and net returns are calculated. By the use of this method the farmer, the farm manager, or the county agent can determine which, of several combinations for a given farm, is apt to be the most profitable. In preparing these combinations, consideration is given to all the factors that might affect their profitableness, such as soil-crop adaption, distance from market, enterprise relationships, and relative prices and costs.[3]

An illustration of the results of budgeting is presented in Table 8. First, three actual systems of farming are presented. By the use of the budgeting method, a suggested system has been devised for each of the three farms. In each case the sug-

[3] In using these methods, farm management investigators present in tabular form data showing yields, production, seed, feed, and fertilizer requirements, expense items and receipts from crops and classes of livestock, and net returns.

gested system shows a larger net income than was obtained by the original combinations of enterprises. This suggests that the resources of the farmer might be used more effectively under the suggested system than those under the systems actually in use.

TABLE 8

SUMMARY OF THREE ACTUAL AND THREE SUGGESTED SYSTEMS*
(60-acre farms)

Items	*Actual System*			*Suggested System*		
	1	2	3	1	2	3
Acres	58	54	65	60	60	60
Value of farm (in dollars) .	2,400	2,700	3,075	3,000	3,500	3,500
Livestock, equipment, feed (in dollars)	742	675	1,797	1,600	1,600	1,450
Number of men	1	1	1	1†	1†	1†
Number of work stock	4	3	3	2	2	2
Acres in crops:						
Corn for grain	18	13	15	12	10	12
Cowpea or soybean hay	5	2		1		.
Mixed clover hay			15	8	10	7.5
Japan clover hay		12	7‡		1	
Wheat				8		6
Rye, cover crop, and pasture					1	1.5
Tobacco	4	2	4	3	2	3
Strawberries (harvested)		2	1	.	2	3
Strawberries (young)		1	5		1	1 5
Other truck .	1	.25	5	2	2	2
Pasture .	21	9	21	16	22	15
Hours man labor on crops	1,435	917	1,890	1,354	1,327	1,741
Hours horse work on crops.	1,190	834	1,445	1,073	960	1,216
Number of livestock.						
Dairy cows . .	2	1	4	6	8	6
Bulls			1			. .
Dairy heifers (1 to 2 yrs.)		1	1	2	2	2
Dairy calves (under 1 yr.)		1	2	2	2	2
Veals . .		.		3	5	2
Sows .			2	1	.	1
Other hogs	3	4	20	8	2	8
Poultry .	50	68	64	100	90	125
Hours man labor on livestock	696	617	1,441	1,525	1,735	1,470
Hours horse work on livestock	58	65	130	123	130	120
Farm receipts (in dollars)	449	1,109	1,743	1,435	1,706	1,958
Products used in household (in dollars)	231	351	382	324	326	324
Farm expenses (in dollars)	273	408	769	555	812	832
Net return:						
Actual (in dollars)	407	1,052	1,356			
Expected (in dollars) .		. .		1,204	1,220	1,450

* Source: John B. Hutson, "Progress in Development of the Budgeting Method of Planning in Agricultural Economics," Kentucky Agricultural Experiment Station, *Bulletin 292, Systems of Farming in the Purchase Region*

† An additional man will be required for 1 to 1 5 months during the crop-growing season.

‡ Oat hay.

2. Substitution. In those cases in which the farmer does not desire a complete reorganization of his system of farming, the method of substitution may be used. The way in which this method may be used is presented in Table 9.[4] The problem

TABLE 9

HOW THE SUBSTITUTION OF ENTERPRISES AFFECTS NET RETURNS*

Item	Organization		Sales		Total Income	
	Present	Suggested	Present	Suggested	Present	Suggested
	Acres	Acres	Bushels	Bushels	Dollars	Dollars
Corn, grain	39 0	56 0		565		283
Corn, fodder	9 0	9 0				
Oats	50 0	42.0	910	124	273	37
Barley	12 0					
Rye	6 0		108		65	
Alfalfa	5 7	5 7				
Clover and timothy	12 0	20 0				
Wild hay	1 8	1.8				
			Pounds	Pounds		
Pork			20,000	20,000	1,600	1,600
Beef			8,000	8,000	400	400
Butterfat			2,400	2,400	1,080	1,080
Wool			100	100	30	30
Mutton			650	650	65	65
Total					3,513	3,495
Less direct expenses†					613	392
Change in net income					203	

* Source Adapted from Minnesota Agricultural Experiment Station, *Bulletin No 205*, pp. 114-116.
† The only expenses recorded here are those involved directly by the changes

presented by this farm may be stated as follows: In order to permit the farmer to develop a definite rotation for the maintenance of soil fertility, it was necessary to substitute some of the small grain acreage for corn and tame hay. What effect would such a substitution have on the net income from the farm as a whole? The following changes were made: Corn was increased from 39 to 56 acres, oats reduced from 50 to 42; barley was eliminated from the system; tame hays were increased 8 acres. These changes resulted in a net gain of $203. Thus

[4] In such calculation only the direct costs are considered.

the farmer could introduce his system of rotation and make a monetary gain at the same time.

3. Standard method. A scheme that has been developed more recently is called the "*standard method.*" This method provides a number of standard organizations of the same cropping system but adjusted to variations in the size of the farm. By means of such standards the farmer, by comparing his present organization with a standard, can determine what, if

TABLE 10

STANDARD FARM ORGANIZATIONS FOR COTTON-PEANUT TYPE OF FARMING*

Item	*Unit*	*40 Acres*†	*60 Acres*	*90 Acres*
Cotton	acres	8	10	20
Peanuts‡	acres	10	16	25
Corn	acres	20	30	40
Oat hay	acres	2	4	5
Rye	acres	(10)§		
Soybean hay	acres	(2)§	(4)§	(5)§
Workstock	number	2	3	4
Dairy cows	number	2	5	5
Young stock	number		2	2
Brood sows	number	3	5	7
Shoats	number	36	60	84
Poultry	number	125	200	200
Income	dollars	3,253	4,912	7,658
Expenses	dollars	1,050	1,868	3,179
Net income	dollars	2,203	3,044	4,479

* Source G W Forster, "Planning the Farm Business," North Carolina Agricultural Experiment Station, *Bulletin No 277*, June, 1931
† Size is measured in crop acres
‡ Peanut hay to be used as needed
§ Double-cropped acres

any, over-all changes should be made in his farming system. In short, these standards are guides to reorganization. (See Table 10.)

4. Direct comparison. A fourth method, known as "direct comparison," is quite different from those already discussed. In this method reliance is placed, not on specific calculations of what might happen if the farmer should reorganize his farm, but upon a direct comparison between individual farmers carrying on the same system of farming. The comparison is made between a specific farm with (1) the average of a number of farms, (2) the most profitable farms, and (3) the least profitable

TABLE 11

ILLUSTRATING THE METHOD OF DIRECT COMPARISON*

Crops	*Unit*	*Your Farm*†	*Average of 170 Farms*	*34 Most Profitable Farms*	*34 Least Profitable Farms*
Barley	acres		1.2	1 4	1 1
Wheat	acres		4 4	3 9	3 9
Oats	acres		35 3	43 4	35 0
Soybeans for grain	acres		5 0	3 6	9 3
Mixed grains	acres		2 8	4.4	1 0
Other grains and peas	acres		5 6	6 6	6 2
Sugar beets, etc.	acres		3 4	5 5	6.7
Corn for grain	acres		36 6	43 5	42.2
Corn for silage	acres		13 7	12 0	16 0
Other corn	acres		2 8	3.3	4 4
Alfalfa hay	acres		15 3	20 5	10.1
Red clover hay	acres		3 8	3.1	5 0
Mixed legumes and nonlegumes	acres		4 5	4.5	3 1
Timothy and/or brome	acres		2.0	2.9	3 7
Other hay and seeds	acres		2.6	2.8	3 3
Total pasture	acres		21 8	25.8	15 9
Tillable land not cropped	acres		4 7	4 6	12.0
Total tillable land	acres		165 5	191 8	178 9
Nontillable land	acres		58 5	63 0	78.3
Total land in farms	acres		224.0	254.8	257.2
Livestock					
Horses	number		3 2	3.5	3.1
Colts	number		5	.3	.8
Dairy and dual purpose cows	number		17 3	20.5	16 3
Other dairy and dual purpose cows	number		17 6	20.2	17 5
Cattle in beef-breeding herd	number		3 4	1.6	2.1
Pounds of feeder cattle produced	pounds		920 0	2,129.0	977 0
Litter of pigs	number		12 3	14 4	11.4
Pounds of hogs produced	pounds		18,669 0	24,692.0	14,459.0
Sheep	number		11.8	8 3	9.3
Hens	number		247.0	275 0	239.0
Income	dollars		12,165 0	17,209 0	10,259.0
Expenses	dollars		6,780 0	8,958.0	6,760 0
Net income	dollars		5,385 0	8,251.0	3,499 0

* Source Adapted from *Annual Report of the Southeastern Minnesota Farm Management Service, 1945*, No. 156, April, 1946

† The farmer fills out this column from data on his own farm.

farms. From such a comparison any farmer is in a position to determine strong and weak elements in his organization and to take such action as he may wish to change his organization with the idea of increasing his net returns. (See Table 11.)

Questions

1. Why must the farmer grow, as a rule, more than one crop?
2. Assuming that the physical conditions are suitable for the production of several crops, why does the farmer have to consider prices and costs in selecting crops?
3. How does the relationship among enterprises affect their choice?
4. Name the methods that may be used in selecting farm enterprises and state briefly how they differ.
5. What is meant by allocating resources to each enterprise?
6. Assuming fertilizer a variable factor and land and other resources fixed, how would production behave as more fertilizer is added? What basic law is involved?
7. If a farmer's resources for any given time are fixed, and he has the task of using these resources on each of several enterprises, what rule may be used to assist him in obtaining a correct allocation?
8. What are some of the practical methods used in selecting and combining enterprises?

References

Black, John D., *Farm Management*, Chapters XVII and XVIII. New York: The Macmillan Company, 1947.

Forster, G. W., *Farm Organization and Management*, Rev. Ed., Chapters V-VIII. New York: Prentice-Hall, Inc., 1946.

Johnson, Sherman E., and others, *Managing a Farm*, Chapters 10 and 11. New York: D. Van Nostrand Company, 1946.

CHAPTER 9

Farm Records—Inventory

THE FARMER in his capacity as a business manager must deal with other businessmen in the buying of materials, equipment, and other things needed in his farming operations. He must hire labor and obtain the services of machinery and equipment on a custom basis for which he must pay a stipulated amount of money or goods. In the sale of farm products the farmer must do business with individuals, firms, or cooperative associations. Obviously, if these "dealings" are to be conducted in a business-like manner, the farmer must keep records and accounts[1] of those with whom he does business.

Farm records, however, are needed for other reasons. They are needed to keep the management informed about the internal operations of the farm. To obtain this information, the farmer must keep production, labor, feed, and other types of records. Accounts, as well as records, must be kept on all phases of the farm business, such as the expense of producing specific crops and livestock products and the income accounts in which are recorded the amounts received for the sale of each product.

Finally, the farmer should know whether or not the farm operations, as a whole, have been successful.

To meet these requirements a set of systematic records and accounts must be set up, kept throughout the year, and analyzed at the end of the year. Summarizing, it can be said that the purposes of records and accounts are:

1. To reveal the nature and amount of business done with outside interests, what these interests may owe the farm, and what the farm may owe outside interests.
2. To show the business conditions of the farm at any given time.

[1] Only farm records are considered in this book.

3. To provide information concerning the operation and management of the farm for the purpose of exercising control over current operations.

4. To provide data that may be used to reorganize the farm on a more profitable basis.

Classes of Farm Records

Records may be kept on all phases of the farm business. Usually they are classified as follows:

Property record or inventory	Feed
Financial	Production
Labor	Materials
Miscellaneous, e.g., breeding, incubating, or hatching	

These records will be described briefly, directions given as to how they may be kept, and a few of the advantages afforded by each type discussed.

Property Record or Inventory

This is one of the most useful of all farm records. It consists of a classified list of all farm property, such as real estate, machinery and equipment, livestock, and feeds. Occasionally it may include a record of such things as growing crops. In some cases also a record is kept of the cash on hand that is used strictly for farming operations, of notes, and of accounts receivable.

Each of these major classifications is, as a rule, divided into minor categories. For example, real estate is divided into land and buildings. A further breakdown is usually desirable. Buildings can be listed as dwellings, tenant houses, and other types of buildings found on the farm. Land may be recorded as cropland, pasture, woodland, idleland, and wasteland. Each of the minor classifications can be further subdivided if necessary. The extent of the subdivision depends upon the importance of the major property item.

1. Classification of farm property. The following scheme may be used to classify farm property:

Real Estate
  Land
  Buildings
  Fences
  Other

Equipment
  Power
  Horse-drawn
  Miscellaneous

Livestock
  Workstock
  Productive livestock
    Cattle
    Swine
    Sheep
    Poultry
    Other

Feeds, Supplies, and Seeds
  Feeds
    Hay
    Grain
    Commercial
  Supplies
    Fertilizers and lime
    Fuels and oils
    Other supplies
  Seeds
    Corn and grain
    Potatoes
    Hay seeds

Growing crops
  Small grain
  Hay crops
  Other

Nonmaterial assets
  Cash and bank deposits subject to check

  Notes receivable

  Accounts receivable

2. Method of procedure in taking an inventory. To keep this record, it is not necessary for a farmer to go to any great expense in the purchase of special forms. An ordinary notebook $7'' \times 12''$ may be ruled so as to provide space for the name and description of the property, a column for the number of items in a given category, a column for the price per unit, and finally a column for the total value, that is, the price per unit times the number of units. (See Form 1.)

On the second page facing the first page of such a book similar columns may be provided to record the property for subsequent years. By trimming the pages so as to leave visible the list of items, it is possible to use this same book for a number of years without rewriting or relisting the items of farm property. If such a scheme is used, it will be necessary to leave a few lines under each major category so as to provide space for new items.

A farm property record book should be properly indexed. This can be accomplished by using ordinary paper or cloth tabs upon which is written the subject to which the tab refers. Thus one tab would be marked "land," another "buildings," another

Form 1. Farm Property

Farm of _____

P. O. _____

A. Real Estate

Land or Building	Date _____ (month) _____ (year)				Date _____ (month) _____ (year)		
	Number	When Acquired	Price per Unit	Value	Number	Price per Unit	Value

B. Machinery and Equipment*

Kind of Implement	Date _____ (month) _____ (year)				Date _____ (month) _____ (year)		
	Number	When Acquired	Original Cost	Present Value	Number	Present Value	

C. Livestock†

Class or Kind of Livestock	Date _____ (month) _____ (year)					Date _____ (month) _____ (year)				
	Number	Age	Weight	Price	Value	Number	Age	Weight	Price	Value

D. Feed and Supplies

Feed or Supplies	Date (mo) (year)		Date (mo) (year)		Date (mo) (year)		Date (mo.) (year)	
	Amount	Value	Amount	Value	Amount	Value	Amount	Value

E. Growing Crops

Crop	Date _____ (month) _____ (year)					
	Acres	Seed	Cost			
			Fertilizer	Labor	Other	Total

* Columns may be provided for estimated total life and annual depreciation

† A column may be provided for the name of the animal where this is desirable or necessary

"livestock," or possibly some subdivision of a given class of farm property.

A farm property record book will be made much more serviceable if care is used in describing each item of property. Such a description is useful in calculating the depreciation, in estimating the present value, and in supplying other useful information. The extent of the description will depend upon the nature of the object. In the case of land, the date purchased and the purchase price should be recorded. A description of the buildings or improvements should include the year built, the cost, and the size of the building erected or purchased. In the livestock record should be recorded the name of each animal, its age, weight, and price paid if it has been purchased. If it has not been purchased, then the estimated value of each head of livestock should be inserted. Implements should be listed separately, and each item should be accompanied by a description giving the type, size, date purchased, and cost.

8. Method of evaluating farm property. The chief difficulty associated with the farm property record is not in the classification of the property nor in the method of recording, but rather in the valuation of each item. The necessity of using conservative values cannot be overstated. If too high or too low values are used, the results obtained will be misleading. The following methods of pricing are suggested:[2]

a. Land. There are several ways of evaluating farm land for inventory purposes. The original cost or purchase price may be used. However, many farms have been inherited, and no such figures as to original cost exist. Furthermore, the original price or cost may be in fact too high or too low. A farm may have been acquired when land was selling at very low prices, or, on the other hand, land may have been bought at inflated prices, and inflated or deflated prices should not be used.

It has been suggested that in place of the original cost or purchase price the current market value should be used. There is, however, no special virtue in current prices, as such prices may be either too high or too low. What is really needed is a value that is reflected by the normal returns from the land. It

[2] G. W. Forster, "Farm Business Accounts," North Carolina Agricultural Experiment Station, *Bulletin No. 278*, 1931, pp. 6-8.

must be granted, however, that such a value is hard to obtain. A very good idea as to land values can be obtained from public reports, which record land values from year to year. Where such data exist, trend values should be used as a guide in determining the value of land for inventory purposes.

The value of a piece of land may be determined also by capitalizing its net rent. The theory underlying the capitalization of rent is that the present value of a piece of land is equivalent to the sum of all future discounting rents.

The method of calculation may be illustrated by assuming a certain rent and a rate of interest. The formula used is: $V = \frac{a}{r}$ in which V is the capitalized value of the land, a the annual rent, and r the rate of interest. Suppose that the annual net rent for a given piece of land is \$5 per acre and the current rate of interest is 5 per cent; then, substituting, we have the following:

$$V = \frac{a}{r} = \frac{\$5}{.05} = \$100$$

The present value of a piece of land may be affected by the anticipated trend in rents. In case rents are increasing at a certain amount per annum, then the above formula is modified by adding another term, $\frac{i}{r^2}$, in which i is the change in annual rent. When so modified it reads:

$$V = \frac{a}{r} + \frac{i}{r^2} = \frac{\$5}{.05} + \frac{.10}{(.05)^2} = \$140$$

In the case of a decrease in the annual rent the second term should be subtracted from the first. Assuming that the net rents were decreasing at an annual rate of \$.10 per acre, then the capitalized value of the land would be equal to \$60.

The method of determining the value of land by capitalizing the net rent is not always adaptable to ordinary use. Obviously, it would be necessary first to obtain the net rent, which would be as difficult (and probably more so) than getting the sales value of land itself. Net rents, of course, may be obtained by making certain corrections in cash rent or share rents, but in each case the net rents obtained are only approximately correct. Selecting the rate of interest to use in discounting the net rent

is also somewhat of a problem. The customary rate used, and one that can generally be readily ascertained in a given locality, is the rate on real estate first mortgages.

Whatever method is used in determining the value of land, it should be stressed that values should be conservative, and no changes should be made in the value of the land during the year except to add to its value the actual cost of improvements, such as tiling, terracing, clearing, and adding new land acquired. To change land values between inventories, where no additions or actual improvements have been made, merely makes for paper profits or losses and thus defeats the real purpose of the record.

b. Buildings. There are two methods used in estimating the present value of buildings.

Original cost basis. The original cost is depreciated at a given rate from date of construction to the present time. For example, if a given building cost $1,000 in 1945 it would be worth $750 ($1,000 − $250) in 1950, if the rate of depreciation used were 5 per cent.

Replacement cost basis. According to this method, an estimate is made of the present cost of replacing the building, that is, the cost of constructing the same building at the time the inventory is taken. This value is then depreciated. The method may be illustrated as follows:

Suppose that a given building was built ten years ago and that it will last ten years more; suppose further that it would cost $1,000 to replace it. Then the annual depreciation would be $50 per year (1,000 divided by 20). Since the building is ten years old, the total depreciation is 10 × $50 or $500. The amount of depreciation subtracted from the present cost of $1,000 leaves $500 as the estimated present value of the building.

The rate used in calculating depreciation varies with the type and condition of the building. Frame buildings in good repair usually depreciate at the rate of 5 per cent, brick buildings at 2 or 3 per cent.

c. Tools and machinery. The value of tools and machinery at the beginning of any period may be found by using the same methods as outlined in (*b*) above. But in the case of this class of assets it is necessary to estimate the junk value of each asset

at the end of its life. For example, suppose a machine cost, when new, $100, its life is 10 years, and its junk value is $10. The depreciation is $100 − $10 or $90. This is an annual rate of 9 per cent. If the machine is now 5 years old, its present value is $55 ($100 − $45).

d. Livestock. The determination of the value of livestock presents some difficulties. Livestock may be appreciating (that is, increasing in value), or depreciating (that is, decreasing in value). In evaluating livestock both appreciation and depreciation must be considered.

Workstock (mules and horses) normally reach maximum value at the age of five or six years. Between these ages and eight or nine years, the value will usually remain almost constant, after which it will decline rapidly. In placing a value on workstock the going market value should be used and appreciated or depreciated at the end of the year, depending on the age of the animals. Any increase in value should, however, be conservative. Depreciation of animals may be made at the rate of 1/7 to 1/10 of the market value or of the original inventory value after the animal has reached its maximum value. Each animal should be listed separately to assist in an accurate statement of value.

Productive livestock. The value of this class of livestock, with the exception of dairy cows, may be determined by estimating the weight of the individual animal and multiplying this weight by the farm price per pound. Breeding stock should be listed separately, and a conservative value placed on each animal, depending on its breeding and market value.

Dairy cows. It is not possible to estimate the value of dairy cattle simply by estimating the weight and multiplying this weight by the farm price of beef. The value of a dairy cow is not determined by her meat value alone, but also by her productivity. The age of a dairy cow influences her value because age is correlated with productivity. On the average a milk cow is in the herd about four years before reaching her prime. Studies indicate that dairy cows valued at $50 after their prime will depreciate about 5 per cent per year, whereas cows worth $200 will depreciate 12 per cent per annum.

Poultry. Occasionally poultry may be of sufficient importance to warrant depreciating the hens in the flock. In esti-

mating or calculating the depreciation on hens, their value as pullets, the length of time they have been in the flock, and their *meat value when killed* are the three things that may be considered. For example, the depreciation of a hen that has been maintained in the flock one year would be 50 cents, if her value as a pullet was $1 and her meat value is 50 cents. Normally, however, it is sufficient to value laying hens at their market price, if this can be obtained. If not, each bird should be valued at its meat value—that is, the live weight of each bird times the price per pound.

e. Grain, feed, and farm supplies. All grains, hays, mill feeds, and other farm supplies should be inventoried at their farm value. This method of valuing farm supplies holds true whether or not these supplies have been purchased or produced on the farm. The purchase price of those feeds or supplies bought should not be used for inventory purposes unless it coincides with the farm price prevailing at the time the inventory is taken.

f. Growing crops. Growing crops are assets in the same manner as supplies on hand. They are assets in the making. These crops should be valued, however, at the actual cost of the seed, labor, and materials used.

g. Barnyard manure. Barnyard manure may be, at times, of sufficient importance to be inventoried. Manure should be inventoried whether it is in the yard or has been distributed to the fields. In the case that it has been distributed it may be taken care of under "growing crops." If not, it should be inventoried separately. It is difficult to give any direction as to the value of manure for inventory purposes, because the value depends so much upon the quality of the manure. Estimates regarding the value of the manure vary widely. For ordinary purposes probably about $3.50 per ton will be satisfactory.

Use of the Inventory

An inventory of farm property may be used for several purposes. When accompanied by a statement of liabilities it may be used to show:

The net worth of the business or its condition at the time of inventory.
The net profit or loss during the year or the progress of the business.

The gross net return on investment.
The rate of return on investment.
The profits.
The labor or management wage.[3]

1. Net worth. The net worth, or the farmer's equity, is obtained by subtracting the total liabilities from the total assets. According to Table 12 the total assets at the beginning of the year are valued at $14,760, and the liabilities at $5,150. The net worth, therefore, is $9,610 at the beginning of the year. At the end of the year the assets were $15,108, and the liabilities were $4,500, leaving a net worth of $10,608.

2. Net loss or gain. The net loss or gain is the difference between the net worth at the beginning of the year and the net worth at the end of the year. If the net worth at the end of the year exceeds the net worth at the beginning of the year, there has been a net gain, and conversely, if the net worth at the end of the year is less than that at the beginning of the year, there has been a net loss. The net gain for Hilldale Farm is $998 ($10,608 − $9,610). (See Table 12.)

TABLE 12

SUMMARY OF INVENTORY OF HILLDALE FARM

Item	*Beginning of Year*	*End of Year*
Resources:		
Land	$ 6,700	$ 6,700
Buildings	4,000	3,881
Workstock	400	374
Cattle	280	400
Swine	200	250
Poultry	108	108
Equipment	1,880	1,700
Feed and supplies	542	800
Seed	50	75
Growing crops	100	85
Cash on hand	500	735
Total value of farm resources	$14,760	$15,108
Total liabilities	5,150	4,500
Net farm worth	$ 9,610	
Net gain	998	
	$10,608	$10,608

[3] *Ibid.*, pp. 16-17.

3. Net return on investment. If a sum equal to the value of the unpaid family labor plus the value of the farmer's own labor is subtracted from the net gain, the difference may be designated as return to investment. For Hilldale Farm, the family labor is valued at $100 and the operator's labor at $300, making a total for unpaid labor of $400. This amount subtracted from the net gain of $998 leaves $598 as return to investment.

4. The rate of return. The percentage rate of return is calculated by dividing the return to investment, as calculated in (3) above, by the average value of the assets and multiplying by 100. Since the average value of the assets of the Hilldale Farm is $14,934 and the net return to investment $598, the rate of return is approximately 4 per cent per annum

$$\left(\frac{\$598 \times 100}{\$14{,}934} = 4 \text{ per cent}\right).$$

5. Profits. Profits are defined as return to management, or the payment for the risk involved in operating the farm. An estimate of the profits may be obtained by subtracting from the net return to investment a sum equal to 5 per cent on the average investment. On the average investment of $14,934 the return at 5 per cent would be $747. This sum, however, is greater than the returns actually made of $598; hence no profits were realized. Or to put it in another way, the return to investment actually realized was $149 less than 5 per cent.

6. Labor and management wage. It is often desirable to know the returns to labor and management combined. In calculating the *labor management wage* the sum of the unpaid family labor plus a sum equal to 5 per cent on the average investment is deducted from the net gain. If $100, the value of the unpaid family labor, and $747, a sum equal to 5 per cent on the average investment, are subtracted from the net gain of $998, the result is $151. This sum is the return for the operator's labor and also for the risks of management. It will be noted that this is less than enough to cover the estimated value of the farmer's labor. This means that either the estimate of value of the farmer's labor or the rate of return (5 per cent) is too high, or that the farmer did not receive payment for the risk involved in managing the farm. The latter might be true

if the owner of Hilldale were a marginal farmer; otherwise, the estimate of the value placed on his labor or the rate used in calculating return to investment was too high.

7. Other purposes. The inventory may be used for purposes other than those already described, such as: adjusting damages covered by insurance, obtaining credit from banks or other credit agencies, and making income tax returns.

Questions

1. State the four reasons why a farmer should keep farm records.
2. What is included in a property record?
3. Name the tasks involved in making a record of farm property.
4. In what ways may a property record be used?
5. Prepare a statement of farm assets and liabilities for the beginning and end of the year and calculate (*a*) the net worth and (*b*) the net loss or gain for the year.
6 Using the data prepared for Question 5, what additional information is needed to calculate (*a*) net returns on investment, (*b*) rate of return on investment, (*c*) profits?

References

Boss, Andrew, and Pond, George A., *Modern Farm Management*, Chapter XXVIII. Saint Paul: The Webb Publishing Company, 1947.

Hopkins, John A , *Farm Records*, Chapters 1-4, and 5. Ames: The Iowa State College Press, 1942.

Johnson, Sherman E., and others, *Managing a Farm*, Chapter 13. New York: D. Van Nostrand Company, 1946.

CHAPTER 10

Farm Records—Other

ALTHOUGH the farm inventory described in the previous chapter is one of the most useful of all farm records, the fact should be stressed that most farmers would find it to their financial advantage to keep other types of records. These other records deal largely with the details of farm operations and would, if kept, expose "soft" or "weak" points of the farm business. Attention will now be directed to such records.

Financial Records

At the outset an understanding of the difference between financial records and financial accounts is necessary. A record is a statement containing data on a specific subject. Thus a property record is a statement of the farm property, its nature and value. On the other hand, an account is a financial statement that is an integral part of a system of accounts. The distinction between these two concepts may be made clear by a concrete illustration. For example, a statement containing information on cash receipts and cash expenditures, if it is not an integral part of a complete set of farm accounts, may be called "cash receipts and expenditure record." But when a financial statement is a part of a comprehensive set of accounts, the statement is designated as an "account," for example, the cash account.

1. Simple or page form of a financial record. One of the easiest ways to keep a financial record is to write down all business transactions as they occur. Form 2 illustrates how this may be done. On the extreme left of the form, Column 1, is recorded the date of the transaction. Column 2 is used to describe the transaction. This description should include the name of the thing bought or sold, the amount and the price per unit, and the name of the person or firm involved. The total dollars involved is placed in Column 3. When the transac-

tion is a sale for cash, the amount is placed in Column 4; and when a purchase, in Column 5.

A record of this type permits a complete and accurate check of the cash by the simple procedure of writing in at the beginning of any period (for example, a month) the amount of cash on hand. The cash on hand, plus cash receipts, less the cash paid out must equal the cash on hand at the end of the period.

2. Multiple form. One of the defects of the page form is that it does not provide for the classification of the transaction.

Form 2. Receipts and Expenses

Farm of _____

P. O. _____

1	2	3	4	5
Date 19____	*Items—Description*	*Amounts Other Than Cash*	*Cash Received*	*Cash Paid Out*
	Cash on hand	Balance forward		
Note: The cash balance should be the same as the amount on hand and in the bank. Always compare cash balance with cash on hand and carry balance forward when corrected		Cash totals		
		Cash balance		

To classify the items, the farmer would have to rewrite each transaction. To avoid this rewriting, and at the same time permit the classification of each item, the multiple record has been designed. (See Form 3.) This form consists of two parts; one is reserved for receipts and the other for expenses. The receipts portion of the record is made up as follows: Column 1 is used to record the value of items sold on account; Column 2 is for recording the total of all cash transactions. The details or description of each transaction is stated in Column 4. Classification of the transactions is accomplished by a series of columns from 5 to 9. A column on the extreme right of the

page is reserved to record the cash received on goods previously sold on account or for which notes were taken in lieu of cash. Similar procedure is followed in the case of expenses.

It is possible to keep an accurate check on these items by recording the amount of cash on hand at the beginning of each month. If this is done, then the cash on hand at the beginning of the month, plus cash received during the month, must equal the cash on hand at the end of the month plus cash paid out. If these do not equal, then some error has been made in recording the transactions, or some transactions have not been recorded.

Although this method of recording business transactions may appear complicated, it is, in fact, a rather simple procedure since it does not require much time to record each transaction in its proper place. In addition to its simplicity, it supplies the farmer with a large part of the information that he will need in conducting his farm in a business-like manner. From such records, he can get an idea as to how his farm resources have been used—the gross income from each major enterprise, and the net returns for each enterprise.

Form 3. Multiple Columnar Form

Receipts

1	2	3	4	5	6	7	8	9	10
Sold on Account	*Cash Receipts*	*Date*	*Details of Transaction*	*Tobacco*	*Cotton and Cottonseed*	*Feed and Grain Crops*	*Eggs and Poultry*	*Miscellaneous Receipts*	*Received from Notes and Accounts Receivable*
	Dr.			Cr	Cr.	Cr.	Cr.	Cr.	Cr.

Expenditures

1	2	3	4	5	6	7	8	9	10
Charge Account	*Cash Spent*	*Date*	*Details of Transaction*	*Building Repairs*	*General Farm Expense*	*Equipment Expense*	*Truck Expense*	*Seed*	*Notes and Accounts Paid*
Cr.	Cr.			Dr.	Dr	Dr.	Dr	Dr	Dr

Labor Records

Labor is one of the most important factors over which the management exercises control. The way it is used affects the net farm income. Hence, it is important that the management know just how each hour of labor is used. To accomplish this task, the farmer must keep a labor record. This information may be obtained by using Form 4, which provides for a record not only of the amount of labor used, but also of where it was used, of the type of equipment used, and of the amount of work accomplished.

It is not a difficult task to keep a record of this sort. The form may be printed in a size that can be carried in the pocket of the laborer, the manager, or the superintendent. The work day is divided (see Column 1) into 30-minute intervals. This scheme permits an accurate record of the labor by the simple device of drawing lines across the face of the record at the beginning and end of a specific task. It is important to account for each hour of the day. If no work was done because of rain or for any other cause, the form should show this information. If a workman is sent to town to get supplies or repair parts for a machine, this fact should be recorded, and the time used accounted for.

The labor record may be used for a number of purposes.

1. It may be used to show how much labor has been used throughout the year, days, weeks, months, or other time intervals. This information will assist the manager in making adjustments in the organization of the farm so as to avoid labor peaks and to obtain a more profitable use of labor during the so called "slack" seasons or periods of under-use of labor.

2. Since the labor record is kept on a day basis, it can be made to show labor used in repairing machinery and other noncritical tasks that were performed during busy seasons of the year. Such jobs should be done when other work is not pressing rather than when critical jobs must be done.

3. By the use of a labor record the manager can determine whether or not a given worker is performing a given task in the least time or is using more time than is necessary. This can be determined by comparing the work done by some norm or

by comparing the work done by different laborers. This information should suggest to the manager how the less efficient laborers can be made more efficient. (Table 13.)

4. From the labor record can be obtained information on the

Form 4. Daily Labor Report*

Farm of _____

P. O. _____

Day of Week _____ Month _____ Year _____

Time	*Kind of Work*	*Field or Crop*	*Kind and Size of Machine Used*	*Man Hours*	*Horses*		*Amount of Work Done (Acres, Loads, Tons)*
					No	*Hours*	
4:30 5:00 5:30	Chores	—	—	1	—	—	—
6:00 6:30	Milking	—	—	½	—	—	4 cows
7:00 7:30	Breakfast	—	—	½	—	—	—
- - -	- - - - -	- - -	- - - - - - -	- - - -	- -	- - - -	- - - - - - - - -
- - -	- - - - -	- - -	- - - - - - -	- - - -	- -	- - - -	- - - - - - - - -
12:00	Plowing for corn	A	Small tractor	4½	—	—	3 acres
12.30 1·00	Dinner						
2:00							
- - -	- - - - -	- - -	- - - - - - -	- - - -	- -	- - - -	- - - - - - - - -
- - -	- - - - -	- - -	- - - - - - -	- - - -	- -	- - - -	- - - - - - - - -
4 30	Rain			2½			Change oil in tractor and adjust carburetor and repair equipment
- - -	- - - - -	- - -	- - - - - - -	- - - -	- -	- - - -	- - - - - - - - -
- - -	- - - - -	- - -	- - - - - - -	- - - -	- -	- - - -	- - - - - - - - -
9.30							
Total Hours				9			

Name of Workman: _____ Report Approved by:

Remarks: _____ _____

Wage Rate $_____

* Form prepared by the United States Department of Agriculture

part played by specific machines in economizing labor. Are such machines simply adding to the expense of production or are they economizing on labor to such an extent that their use is contributing to the net income of the farm as a whole? These and other questions regarding the use of machines and equipment can be answered at least in part from the labor record. (Table 14.)

5. Labor and machine requirements for various enterprises per acre, or some other unit of measurement, can be obtained from the labor record. Such data are essential in making changes in the organization of the cropping system. For example, if a farmer thinks he could improve his organization by adjusting his enterprise, he can determine, on the basis of a labor record, just how much labor or machine work would be saved if the proposed adjustments were put into effect.

Feed Records

These records become important on farms where livestock is making a significant contribution to the farm income. The purpose of feed records is to determine how the feed produced on the farm and feed purchased are used. Records for this purpose may be kept daily, as in the case of the labor record, or they may be kept for some other time span, say a month or a year. The length of time that should be used will depend upon the type of livestock and its importance. If a class of livestock is a major enterprise, more detailed information will be needed than if the enterprise is of minor importance. Some classes of livestock do not require daily records unless the farmer is interested in some details of the production process. There is seldom any reason for determining accurately each day the amount of feed consumed by beef cattle or hogs. On the other hand, a daily determination of feed fed to laying hens or dairy cows might yield significant information because the daily output in each case can be determined.

To illustrate how a feed record may be kept, reference is made to Forms 5 and 6. In Form 5, the stub is used to indicate the type of information needed, such as (1) the amount of feed on hand at the beginning of any feeding period, (2) the feed purchased, and (3) the feed grown on the farm during the feeding

period. These three items make up (4), the quantity of feed available.

The next question is, how was this feed used? To answer this question it is necessary to use some way of measuring or of estimating how much feed is consumed by each class of livestock. This task may be accomplished by weighing the amount used daily, if a daily record appears desirable. Usually, however, it is only necessary to weigh or measure the feed used at the beginning and the middle of each month. To obtain the total amount of feed consumed, the average feed per day can be multiplied by the number of days on feed. It may be

Form 5. Monthly Feed Record

Month of _____ 19____ Farm of _____

P. O _____

Item	*Corn (bu.)*	*Oats (bu.)*	*Wheat (bu.)*			*Hay (tons)*	*Commercial Feeds*				
Supply 1. On hand beg of month											
2. Purchased											
3. Raised											
4. Total supply											
Disposition Workstock											
Cows											
Swine											
Poultry											
5. Total											
6. Sold											
7. On hand end of month											
8. Shrinkage or loss											

necessary to weigh the feed when there has been any change in the ration or in the kind of feed used. When the amount of feed for each class of livestock has been determined, it can then be entered in the proper place in the record.

Form 6. Monthly Poultry Feed Record

Month _____ 19____ Farm of _____

P. O _____

Feed Used

	1	2	3	4	5
Feed	*On Hand 1st of Mo. (lbs)*	*Bought (lbs)*	*Total Supply (1 + 2) (lbs)*	*On Hand Last of Mo. (lbs.)*	*Feed Used (3-4) (lbs)*
Laying mash					
Starting and growing mash					
Scratch					
Wheat					
Oats					
Oyster shells					
Corn					

It may be desirable to check the amount of feed fed to each class of livestock. If so, it can be determined for any period as follows: *Supply on hand at the beginning of the period, plus the feed bought during the period, less the feed on hand at the end of the period.*

Under normal conditions, the amount fed will be somewhat different from that obtained by weighing the feed as fed. The difference may be due to shrinkage and loss in storage. But the difference should not be great. If it is, there may have been a mistake made in weighing the feed or in failing to record the feed used or sold. In the event that the difference is too great to be accounted for by loss in storage, the excess amount should be distributed to each class of livestock on the basis of the amount recorded as fed.

Feed records may be used in a number of ways of which the following are perhaps the most important.

1. Well-kept feed records can be made to show the total amount of feed fed to specific classes of livestock in terms of quantity, digestible nutrients, and values.

2. From the data can be obtained the rate of gain per unit of feed. To obtain this information, the livestock will have to be weighed at the beginning and end of each feeding period. This information will enable the farmer to compare at the end of each period the cost of the *added* feed with the added value of the product and assist him in deciding on the length of time livestock should be kept on the feed.

3. The data on feed consumed may be used to compare the performance on a given farm with standard performance. Such a comparison might suggest changes in the rations used and in the amount of feed fed.

4. It is possible, by applying cost rates to feeds used and current prices for different types of livestock products, to determine which of several livestock enterprises should be expanded and which might be eliminated from the system of farming. This statement should not be interpreted as meaning that only the most profitable enterprises should be retained because to eliminate the less profitable ones might reduce the income from the farm. However, such an analysis of the feeding record would indicate the direction in which changes might be made so as to increase the net income from the farm as a whole.

Production Records

Production records are designed to obtain information on actual performance. They are of several kinds, depending upon

Form 7. Crop Production Record

Year _____ Farm of _____

Name of Crop	*Acres*	*Yield*	*Production*	*Disposition*	
				Sold	*Used on Farm*

the type of information needed. If data are wanted on crops, Form 7 may be used. This same type of form may be used for livestock by simply substituting the words "livestock" for "crops," "number" for "acres," and "unit" for "yield." In some cases, records on a specific crop or class of livestock may be desirable. If so, a form similar to Form 8 may be designed and put into use.

Form 8. Daily Poultry Record

Month of _____ Year _____ Farm of _____

Breed of Hens _____ P. O. _____

Day	*Eggs*				*Hens*			
	Production Number	*Used by Operator Number*	*Used by Owner Number*	*Sold No*	*Sold*			*Died*
					Number	*Lbs.*	*Value*	
1								
2								
3								
4								
- - - -	- - - - -	- - - - -	- - - - -	- - -	- - - -	- - -	- - -	- - -
- - - -	- - - - -	- - - - -	- - - - -	- - -	- - - -	- - -	- - -	- - -
30								
31								
Total								

Produced during month _____
On hand first of month _____
1. Total supply _____

Marketed _____
Used by operator _____
Used by owner _____
On hand last of month _____
2. Total disposition _____

Short or over (1-2) _____

Birds on hand beginning of month _____
Less hens sold _____
Less hens died _____ _____

On hand end of month _____
Average for month _____
Number of eggs per bird _____
Per cent of birds in lay* _____

* Per cent of birds in lay may be determined by dividing the number of eggs laid during a given period by the number of hen-days To illustrate, suppose that, on the average, there were 100 birds in a flock. Then the total hen-days for a 30-day period would be $30 \times 100 = 3{,}000$ If, during this period, the total eggs laid was 2,400, then the per cent of birds in lay would be $\frac{2400 \times 100}{3000} = 80\%$.

Production records are helpful to the farmer in a number of ways.

1. Production records are always needed if the farmer is to keep an accurate record of what is produced on the farm, how it has been disposed of, and what is on hand at any given time. It takes the "guess work" out of this phase of the farm business.

2. Information on production, when accompanied by data obtained from feed and material records, may be used to determine "input-output" ratios, or the amount of output per unit of input. Such ratios are measures of efficiency. For example, the amount of feed used per dozen eggs is an efficiency ratio that may be used effectively in determining whether or not egg production, in any given case, is above or below a common or acceptable standard. If more feed is being used per unit of output than that of some recognized standard, then the farmer should consider ways and means by which the feed can be used to a better advantage. An examination of his production practices might reveal defects that could be eliminated. For example, it might be discovered that a significant part of the feed is being wasted, that is, it is not being consumed at all. Such a defect can usually be remedied quickly and without much cost. Perhaps the seed and fertilizer used are not of the best, or the methods used in planting or in distributing the fertilizer are defective. These are but a few of the ways in which input-output ratios may be used to improve production efficiency.

3. Production data are always needed for the developing of a new system of farming. It is almost impossible to develop a new crop and livestock combination for a given farm without production data. For example, suppose a farmer wants to expand some livestock enterprise, on the idea that it would be profitable. He could do this without reference to any production data (that is, "he could ride his hunch") or he could, by past production data, determine in advance what the results might be. Of the two methods, the latter is the more effective, and such a method can be used only when sufficient production data are available.

Materials Record

This record is designed to keep an accurate account of all materials used on the farm, such as fertilizer, sprays, and seeds. It may be used:

1. To determine the uses of materials and the input-output ratios as described under production records.

Form 9. Materials Record

Date _____ _____ Farm of _____
(month) (year) P O _____

	Fertilizers (tons)					*Seeds (bus.)*			*Sprays (lbs.)*	*Other*
	4-8-4	2-10-6				Wheat	Oats	Corn	Arsenic	Lime
1. On hand beginning period										
2 Purchased										
3. Total supply										
Disposition:										
Corn										
Wheat										
Oats										
Potatoes										
_____										
_____										
_____										
4. Total used										
5. On hand end of period										
6 Shrinkage or not accounted for										

2. To measure, in association with production record, the effectiveness of particular types of materials. For example, the question arises as to whether or not a given grade or brand of fertilizer is actually giving the results, in terms of production, that should be expected. If not, the results obtained may be due to defective materials or to the manner in which the ma-

TABLE 13

AN AVERAGE DAY'S WORK FOR AN EXPERIENCED FARM HAND*

Corn:			
Hand husking from the stalk, and cribbing (40 to 60 bu. yield), bu	60	to	80
Cutting and shocking corn by hand (40 to 60 bu. yield), acres	1	to	1.5
Shocking corn after a binder (40 to 60 bu. yield), acres	2.5	to	4
Husking corn from the shock by hand (40 to 60 bu. yield), acre	0.75	to	1
Hoeing corn, acre	1	to	4
Cotton:			
Chopping and hoeing cotton (first time), acres.	0.75	to	1.5
Picking cotton (main picking), pounds of seed cotton	150	to	200
Hand stripping cotton, pounds of seed cotton	300	to	400
Potatoes:			
Cutting seed by hand, bushels	15	to	18
Cutting seed by cutter, bushels	25	to	35
Dropping potatoes by hand, acres	1.5	to	2
Planting, two-horse planter, acres	3	to	5
Picking up (commercial areas), bushels	100	to	200
Fruit-picking, average yields:			
Raspberries (commercial—season's average), qts.	30	to	60
Blackberries (commercial—season's average), qts	40	to	70
Strawberries (commercial—Intermediate Eastern States), qts.	70	to	100
Apples, Eastern orchards, bushels.	30	to	50
Apples, Western irrigated, bushels	40	to	60
Peaches, Eastern, bushels	30	to	40
Vegetables, average yields:			
Picking tomatoes for processing, tons	1	to	2
Picking snap beans for processing, pounds	300	to	350
Harvesting beets and carrots for processing, ton	0.5	to	1
Fence-building, posts approximately 20 feet apart			
Posts driven, per man (two-man crew):			
Two strands of barbed wire, rods	40	to	60
Six strands of barbed wire, rods	25	to	40
Wide woven wire with one barbed wire, rods	35	to	45
Posts set, per man (two-man crew):			
Two strands of barbed wire, rods	30	to	45
Six strands of barbed wire, rods	12	to	20
Wide woven wire with one barbed wire, rods	15	to	25
Tilling:			
Digging three-foot ditch by hand, feet	100		
Digging four-foot ditch by hand, feet	60		
Laying four- to six-inch tile, feet.	1,500	to	2,000
Cutting firewood by hand:			
Four-foot length cords	1	to	2
Milking dairy cows once:			
Cows milked by hand, per hour, head.	6	to	8
Cows milked with two-unit milking machine, per hour, head	12	to	14
Grain:			
Shocking, acres	5	to	10
Stacking, two-man crew (rate per man), acres	4	to	6
Scooping from bin or box, tons	18	to	25

* Source: Adapted from Sherman E. Johnson and others, *Managing a Farm*, pp. 203-204. New York:

TABLE 14

DAILY DUTY OF MACHINES OF SPECIFIED KINDS AND SIZES*

Operation	*Kind and Size of Implements*	*Power Used*	*Average Acres Covered per 10-Hr. Day*
Plowing	Moldboard, walking, 8-inch	1 horse	1 0
	Moldboard, walking, 14-inch	2 horses	2 0
	Moldboard, 2-bottom, 14-inch	5 horses	4 0
	Moldboard, 2-bottom, 14-inch	15 h p. tractor	8 0
	Disk plow, 50-inch	20 h p. tractor	13 0
	Disk plow, 10-foot, vertical, one way	20 h.p. tractor	28.0
Disking	Single disk, 8-foot, once over	4 horses	15 0
	Single disk, 20-foot, once over	20 h p. tractor	60.0
Harrowing	Spike-tooth, 10-foot, once over	2 horses	15 0
	Spike-tooth, 20-foot, once over	4 horses	30 0
	Spike-tooth, 24-foot, once over	15 h p. tractor	70 0
	Spike-tooth, 32-foot, once over	20 h p. tractor	90 0
Cultivating corn or cotton	½-row, walking (2 times to row)	1 horse	2 5
	1-row, riding (1 time to row)	2 horses	7 0
	2-row, riding (1 time to 2 rows)	3 horses	12 0
	2-row, riding (1 time to 2 rows)	15 h p. tractor	20.0
	4-row, riding (1 time to 4 rows)	15 h p. tractor	35.0
Cutting corn	Binder, 1-row (corn not shocked)	3 horses	6 5
	By hand (corn shocked)	hand	1.2
Picking corn	Mechanical picker, 1-row	15 h p. tractor	7.0
	Mechanical picker, 2-row	20 h p. tractor	12.0
	By hand	hand	1 5
Mowing hay	Mower, 5-foot	2 horses	8.0
	Mower, 7-foot	15 h.p. tractor	20.0
Drilling grain	Disk drill, 7-foot	3 horses	12 0
	Disk drill, 10-foot	6 horses	18 0
	Disk drill, 10-foot	20 h p. tractor	25.0
	Disk drill, 20-foot	20 h p. tractor	50 0
Harvesting grain	Binder, 6-foot	3 horses	9 0
	Binder, 8-foot	4 horses	14 0
	Binder, 8-foot	15 h.p. tractor	20.0
	Combine, 5-foot	15 h.p. tractor	11 0
	Combine, 10-foot	20 h.p. tractor	22.0
	Combine, 16-foot	20 h.p. tractor	30 0
			Minutes per cow
Milking cows	Milking machines. 2-unit (one milking)	electric motor	5
	Milking by hand (one milking)	hand	9

* Source· Adapted from Sherman E Johnson and others, *Managing a Farm*, p 173 New York. D Van Nostrand Company, 1946.

terials are used. Without materials and production records such conclusions cannot be reached.

3. To calculate the actual losses in the use of materials. The farmer wishes to know how much of a given material is actually used in production, and how much is wasted. This is an important question and can be answered only by a detailed materials record.

Miscellaneous Records

There are other records that, under special circumstances, a farmer may find useful. A breeding record is almost indispensable on livestock farms. Such a record should provide for the name of the dam, the sire, date bred, and when the young was dropped. An incubator record is needed if a farmer is engaged in hatching eggs, either for his own use or for the sale of day-old chicks. A machinery record will be found useful when a farmer is doing custom work or is using heavy equipment on his own farm. A record of this sort ought to provide for the type of machine used, time consumed, fuel bought, repairs made, and hours of man labor used, with additional columns for other items of cost. Not infrequently a record of the farm products used in the home is needed, especially if the value of these products is to be used in calculating total farm income. Such a record should be kept daily and should have a column for each of the major products used in the home.

Questions

1. What is the difference between a record and an account?
2. Describe two ways of keeping records of receipts and expenditures.
3. Describe how the use of labor may be recorded. What are some of the ways in which labor data may be used?
4. How may the data on feed be used?
5. Describe production records and indicate how the data collected may be used.
6. Construct a record form for recording facts about poultry. Explain how it should be kept and some of the ways in which the data may be used.
7. In what ways may "averages" or "norms" in performance of farm tasks be used to increase the efficiency in the use of land, labor, and capital?

References

Hopkins, John A., *Farm Records*, Chapter 16 Ames: Iowa State College Press, 1942.

Johnson, Sherman E., and others, *Managing a Farm*, Chapter 14 New York: D. Van Nostrand Company, 1946.

CHAPTER 11

Economics of Soil Conservation

LAND is one of the major factors of production.[1] That part of land that is designated as soil is not only subject to exploitation in the normal processes of production but is also subject to wilful premeditated destruction. In either case it is irreplaceable except by the slow natural process of weathering. In this respect land differs from labor, capital, and management, which are not only exploitable but, unlike land, are replaceable. It is this characteristic of irreplaceability that gives soil its great economic significance, and about which centers the great issues of the modern world. It is the nature of this problem, usually designated as the problem of "economics of land use" or "soil conservation," to which attention will now be directed.

Magnitude of the Problem

This nation has acquired, through conquest, exploration, and purchase, a continental land area of 1,905 million acres. Of this vast domain about 1,570 million acres or 82.4 per cent is now used for agricultural purposes.[2] Approximately 415 million acres of this total are used for crop production. L. C. Gray, an authority on land problems, states: "It has been estimated that over 50,000,000 acres of cropland has been essentially destroyed,[3] that more than three-fourths of the original surface soil has been lost on 282,000,000 acres of all types of land . . . and that 75 per cent of the cropland areas of the United States reported by the 1935 census are in need of conservation practices."[4]

The nation-wide reconnaissance survey made in 1934 gives

[1] Land, as an economic concept, includes all of the gifts of nature. In this chapter attention is confined to that part of land known as "soil," which is used largely in the production of agricultural products.

[2] Includes grazing area.

[3] "Destroyed" as used here means the total elimination of the original productive power of the surface soil.

[4] U. S. D. A. *Yearbook*, 1940, "Farmers in a Changing World," p. 413.

more specific information as to the extent to which the soils of the United States have been affected by wind and water erosion.[5] To indicate the degree of erosion the information is presented in four categories: (1) slight erosion—land from which less than 25 per cent of the original soil surface has been removed; (2) moderate erosion—land from which 25 to 75 per cent of the soil surface has been removed; (3) severe erosion—"This includes the following conditions, occurring either singly or in combination with gullies or moderate sheet or wind erosion: severe sheet erosion, where more than 75 per cent of the original surface soil has been lost, and severe wind erosion, with large amounts of surface soil removed and local destructive accumulations";[6] and (4) essentially destroyed for tillage.

There are over 700 million acres, or 37 per cent, slightly eroded; 776 million, or 41 per cent, moderately eroded; about 225 million acres, or 12 per cent, severely eroded; and 57 million, or 3 per cent, essentially destroyed. The figures add up to 1,759 million acres, or about 92 per cent of the total land area that has to some extent been affected by erosion.

An attempt to indicate the economic implications of soil erosion was made by the Federal Government in cooperation with the several states of the Union. (Table 15.) This study was designed to determine (1) the amount of land in the continental United States that could be farmed profitably at a given level of farm prices and under existing farming methods and (2) the amount of land that could be farmed profitably under the same level of prices if recommended farm practices were used. It was assumed that the recommended practices would be of such character as to prevent soil injury. The prices and costs used in the computation were those that prevailed during the period from 1921 to 1936 inclusive. The land available included not only that under cultivation at the time the study was made but also that which might be made available from "plowable pasture areas, land in brush, timber, land in need of irrigation or drainage." In short, the study included all land, actual and potential, that could be farmed profitably at the assumed level of prices and costs. The results of this study have been summarized as follows:

[5] U. S. D. A. *Yearbook*, 1938, "Soils and Men," pp. 84-110.
[6] *Ibid.*, p. 91.

The present cropland area . . (1935) is 415,334,931 acres including "cropland harvested," "crop failures," and "cropland idle or fallow" Of this area it is estimated that 60 9 per cent is either subject to continued erosion under current practices or is of such poor quality as not to return a satisfactory income at the price levels assumed Thus 39 1 per cent, or 160,948,703 acres, can be expected to yield satisfactory returns and can be cultivated safely without serious erosion under present practices . . Of the 60.9 per cent of the cropland area unsuited to cultivation under present practices and the price levels assumed, more than one-half (42 9 per cent of the total cropland) is subject to erosion but could be used safely under good practices.

TABLE 15

ESTIMATE OF LAND SUITABLE FOR CULTIVATION IN THE CONTINENTAL UNITED STATES*

Item	*Millions of Acres*	*Per Cent of Total (1935 = 100)*
Land in cultivation in 1935	415 33	100
Land suitable for cultivation under present soil conservation practices.		
In cultivation.	160.95	38 8
In plowable pasture .	21 61	5 2
In brush or timber. .	19 86	4.8
In need of drainage. .	6 43	1.5
In need of irrigation	2 92	0.7
Total	211.77	51 0
Land suitable for cultivation under best soil conservation practices:		
In cultivation	339 08	81.6
In plowable pasture.	52 72	12.7
In brush or timber .	42 15	10 2
In need of drainage .	7 66	1.8
In need of irrigation	5 85	1.4
Total	417 46	107 7

* Source Adapted from U S D A *Yearbook*, 1938, "Soils and Men," Table 4, p 95

Of those lands not now in cultivation, it is considered that 50,816,984 acres could safely be cultivated under present practices. These areas are for the most part plowable pastures in grass, or lands in brush and timber at the time the census was taken, with some smaller proportions of land that could be profitably and safely drained or irrigated. Including these areas, there is a total of 211,786,687 acres of land that can be safely cultivated under present practices and under price levels somewhat like those since 1920. This acreage is equivalent to 51.0 per cent of the present cropland area.

In the event of widespread adoption of best soil-conservation and management practices, it is estimated that approximately 339,079,000 acres, or 82 per cent of present cropland areas, would give adequate returns at the price levels assumed and could be safely operated without appreciable damage by erosion. On the other hand, it is estimated that by the use of the best conservation and management practices and under the price levels assumed, it would be possible to add a large area, approximately 108,386,770 acres, that is now in plowable pasture, brush or timber, or in need of drainage or irrigation. If this were done, the total area of land suitable for cultivation would be approximately 108 per cent of the present cropland area, or 447,466,252 acres. This area is slightly more than double that suitable for cultivation under present practices and price levels assumed for the survey.[7]

Some Causes of Soil Depletion

It is difficult to visualize the magnitude of soil injury and to determine the causes that have been responsible for it. Some of the injury, as Kellogg has pointed out, is more apparent than real. Referring specifically to soil erosion he states:

> Much of it is the perfectly normal process of mountain-building and wearing down. Nor is it all harmful, in fact, an important part is essential to the formation of productive soils. On the other hand, some of the erosion that is least noticed by the casual observer is the most harmful.[8]

The causes, although often complex, may be classified broadly as either physical or economic in character. This classification is not all inclusive since soil injury may be traced to political and institutional sources. Thus the size of the farm, as determined by the Homestead Act of 1864, no doubt has had some effect on the rate of soil injury. It is equally true that our social and economic institutions, such as "fee simple ownership," have had an important influence upon the extent and rate of soil destruction. But for convenience, political and institutional causes will be considered as economic in character.

1. Physical causes. According to Kellogg, losses in productive power of the soil may result from changes that take place in the physical structure and the chemical composition of the soil.

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[7] *Ibid.*, p. 95.

[8] Charles E. Kellogg, "Clear Thinking About Soils," *Farm Policy Forum*, Vol. I, No. 4 (October, 1948), pp. 8-12. Iowa State College Press

Defining soil structure as "the grouping of the individual particles within the soil mass," Kellogg states:

A desirable structure may be destroyed either by long-time cultivation or by erosion. Long-time cultivation is usually, but not always, necessary for deterioration of structure Plowing of heavy clay soils when wet often brings about an immediate cloddy condition unfavorable to plant growth. Generally speaking, however, decreases in the granulation of a soil through cultivation are so small from one year to the next that many years are necessary before the effects become serious. Tillage breaks down granulation without actual removal of soil, whereas erosion accomplishes deterioration of structure by removal of friable surface horizon overlying a less friable subsoil. Changes in structure due to erosion ordinarily do not take place until the land has been cultivated for a period of years or where grasslands have been seriously overgrazed, after which deterioration of structure may occur rapidly or very gradually.[9]

The reduction in productive power due to chemical changes may take place in one of three ways: (1) by use of the chemical elements by plants, (2) by leaching, and (3) by erosion. H. H. Bennett states: "Approximately 12,600,000 tons of nitrogen, 15,200,000 tons of potassium, 1,200,000 tons of phosphorus, and 255,000,0000 tons of organic matter[10] are taken from the soils of the United States every year by crops, grazing, and leaching."[11]

Leaching, or the action of water passing through the soil, removes the physical bases of production. The extent to which this process removes soluble minerals is not known, but it appears that considerable quantities of calcium, nitrogen, potassium, and magnesium are removed. Phosphorus is apparently not affected by leaching.[12]

Among the physical causes, erosion, which, according to recent studies, removes annually from the surface soils of the United States 93.3 million tons of plant food materials from cropland and 37.2 million tons from pasture areas, is perhaps the most destructive.[13] Erosion accounts for about 22 per cent of the nitrogen, 52 per cent of the phosphorus, 58 per cent of the

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[9] U S. D. A. *Yearbook*, 1938, "Soils and Men," p. 85.

[10] Organic matter means all of the substances in the soil that are directly or indirectly the product of living organisms.

[11] U. S. D. A. *Yearbook*, 1940, "Farmers in a Changing World," p. 432.

[12] U. S. D. A. *Yearbook*, 1938, "Soils and Men," pp. 85-86.

[13] *Ibid*, p. 99.

potassium, 34 per cent of the calcium, 49 per cent of the magnesium, and 10 per cent of the sulphur that are lost annually.

2. Economic causes. Insofar as the action of farmers is prompted by economic motives, the physical causes of soil injury are economic in fact or in origin. It is the farmer's struggle to make a living that often induces him to destroy the soil resources. In part, the actions of farmers leading to soil injury are premeditated and, in part, are due to ignorance as to the methods that are recommended to conserve the soil resources (that is, to reduce the rate at which these resources are used).

At the outset of our national existence land was so abundant, in comparison to labor, capital, and management, that its exploitation in the process of production was, from a private point of view, justified. To conserve the soil, which was the cheapest factor of production, indeed free or almost so prior to 1890, was viewed as nothing short of economic folly. In short, soil resources were considered not only cheap but also inexhaustible.

The destruction of the soil, however, did not cease as might have been expected when land became relatively scarce and expensive. It continued, but for different reasons. Under owner in fee simple the rights of owners are almost, although not quite, absolute. There are no provisions under ownership in fee simple to the effect that the farmer must economize the soil and conserve its natural characteristics. On the contrary, the owner may at his discretion destroy the soil, not only in the normal processes of production, but also by the use of defective cultural methods.

Ownership under fee simple is not the only reason, although it is a basic one, why farmers tend to destroy soil resources. In many cases they find it necessary in order to maintain, even for a short period, a standard of living equal to that enjoyed by persons in other sections of the economy. The desire for this standard of living is most easily satisfied when directed to the exhaustion of the soil. This can be put into effect most readily when the land is free from debt, although it is by no means limited by such conditions. In this case, the owner may, and usually does, take a short-time point of view of his economic well-being. As he views the situation, land is, among the factors of production, most readily subject to drastic and uneconomic

exploitation. Other factors, such as his own and the family labor, if they have no alternative use, are equally subject to exploitation. To increase his income, or to maintain it at any predetermined level, the farmer turns to the land and to his family labor as the chief resources that can be exploited. This explains, at least in part, why unincumbered owners are among those who are most proficient in destroying their land.

It would be a grave mistake for one to assume or to contend that the desire for a higher standard of living is the sole economic reason why farmers destroy their soil resources. There are other causes; one of these is the necessity of meeting unavoidable payments, such as taxes, and principal and interest on mortgage debt. If for any reason, such as low farm prices, it becomes difficult to meet these payments when they fall due, the farmer may resort to depleting his soil resources. In such cases farmers no doubt consider such action as only temporary, and in due time they will replace the "stolen" elements in much the same manner as individuals or agencies often steal or misuse valuables intrusted to their care. The anticipated higher prices of farm products and lower production cost that would provide the conditions under which a soil replacement program could be undertaken never materialized—the result, soil-depleted farms.

There are cases in which absentee financial control has been the immediate cause of soil injury. Allen and Foster writing on this subject make this pertinent comment:

> Absentee financial control is one of the outstanding devices through which economic forces have encouraged exploitation. For example, in a forest region, if the local people, including the landowners, could vote on how the forests were to be handled, they probably would insist in many cases upon sustained-yield operations under which local timber industries could have permanent life. The creditors of the forest owners, however, particularly if they live at a distance, are frequently more interested in liquidating their investments than in developing permanent industries in rural sections. In fact, as long as absentee private owners and creditors have complete control, forest destruction will probably be a common practice where there is timber to be exploited.[14]

These authorities also point out that among the economic causes of soil injury is the selective demand for farm products

[14] U. S. D. A. *Yearbook*, 1940, "Farmers in a Changing World," p. 418.

brought about by armed conflict. A classic example of this demand and its effect on the soil was the need for wheat during World War I. To cite Allen and Foster again:

> . . . Extensive plowing of the western plains for wheat growing was a direct result of the 1914-18 war. . . . Under war conditions, the temptation was even greater than in peacetime to "mine" the soil—to take as much from it as possible without putting anything back Steep hillsides were plowed, and the rains were allowed to wash the topsoil away [15]

The advance in technology, especially the advent of the tractor with plowing and seeding attachments, was partly responsible for this devastation of the western plains. It was the complete mechanization of small grain production from the preparation of the seedbed to harvesting that made possible the conversion of large areas of virgin grassland into vast wheat fields. In this manner the natural cover was destroyed, and the soil was exposed to the devastating action of the winds. The destruction was on such a vast scale that thousands of people had to flee the devastated areas.[16]

L. C. Gray points out that traditional attitudes and institutions are among the causes of soil misuse. Among these is the land policy of distributing the public domain of some 1,400 million acres to private individuals.[17] This policy was adopted because it was thought that the land resources of the nation would be conserved to a greater extent under private than under public ownership.

> Outside of making land easily available in convenient units, our land policy has been characterized by an almost complete lack of any positive attempt to give rational direction to land settlement. . . . The application of the homestead policy to the Great Plains illustrates the unrealistic character of our land policy in its land-settlement aspects. Provisions of the act were drawn up to fit conditions of the moist Mississippi Valley, where 160 acres usually constituted an ample unit for a family farm. Settlement rapidly crossed the 100th meridian and entered the arid sections of the western plains, where 160 acres constituted a highly inadequate unit of operation. Yet it was not until 1904 that the Kinkaid Act permitted homesteads of 640 acres in the

[15] *Ibid.*, p. 418.

[16] See *Grapes of Wrath* by John Steinbeck for a graphic account of the dislocation of the farm population following this greatest mass destruction of soil in our history.

[17] This has been known as the "homestead policy," as embodied in the Homestead Act of 1864.

Nebraska sand hills, and not for 5 years more was a 320-acre homestead established for any large area. Moreover, these enlarged homesteads, including the stock-raising homestead of 1916, proved to be little more than a gesture in the right direction. No effective provision was made to determine the true character of the land or to protect settlers in the investment of their life's savings and their hopes. Widespread farm abandonment, heavy costs for relief and emergency loans, the need for a repurchase program to take back certain of these lands into public ownership, and the devastation of millions of acres through wind erosion are among the heavy costs that the Nation now has to bear as a result of the unrealistic land policy that governed the settlement of the Great Plains.[18]

The rate of destruction of the soil resources is affected by the systems of farming followed and by the type of tenancy practiced. Systems of farming that require continuous row cropping usually are more destructive of the soil surface than those systems that include the production of forage crops and pastures. Thus where the continuous cropping is practiced, such as exclusive cash-grain, cotton, and tobacco production, the soil surface is apt to be destroyed or seriously injured. For example:

In the Willamette Valley, Oregon, wheat was the principal crop for about 60 years. In the beginning large yields were obtained, but the soil soon became foul with wild oats and other weeds. The summer-fallow system was then adopted. The yields gradually declined on land that produced wheat continually, until as low an average as 10 to 12 bushels to the acre was reached.[19]

Tenancy affects the use of the soil in several ways. First there may be, and usually is, a tendency for the landlord and tenant to exploit the land, since both must get a living from the soil. The result is that, after tenant farms are exploited to the limit of the available soil resources, then they are either abandoned or converted into rural residences. The divergent interests of the landlord and the tenant may result in injury to the soil. In all cases of share tenancy the landlord is motivated by the desire for high yields, whereas the tenant is more interested in obtaining the greatest net returns per hour of labor used. These conflicting interests may, and usually do, lead to

[18] U. S. D. A. *Yearbook*, 1938, "Soils and Men," pp. 113-114.
[19] *Ibid.*, p. 142.

the exploitation of the soil by the tenant—that is, the tenant rather than exploit his own labor will tend to exploit the land that belongs to the landlord. The tenant in obtaining his objective will grow those crops that tend to deplete rather than to conserve the soil resources. It is therefore no coincidence that soil-exhausting crops are largely grown on tenant farms.

A special tabulation of 1935 farm census data in 27 selected local areas distributed among the cotton, tobacco, wheat, and corn regions indicates that tenants have a higher proportion of the land in crops than owners, and conversely a lower percentage in pasture.

That overcropping and specialization in the production of soil-depleting crops is an important characteristic of tenant farming is indicated by data obtained within local communities as well as by census data for the entire country. A farm survey in southwestern Iowa revealed that on rented farms 66 per cent of the cropland was in soil-depleting and erosive crops (corn and soybeans), as compared to 56 per cent on owner-operated farms, and only 15 per cent in soil-conserving grasses and legumes, as compared to 21 per cent on owner-operated farms.[20]

To these causes may be added three others that permeate the whole farm economy and that directly or indirectly affect the manner in which the soil resources are used.

First, prices of farm products tend to be at a minimum. This condition is the result of unequal competition in the buying and selling of farm products. On most markets where farm products are sold there are few buyers and many willing sellers. Since the product is usually one that cannot be or is not standardized, neither the buyers nor the sellers know, except in a rough way, the quality of the products offered for sale. Under these conditions prices tend to be "conservative" or at a minimum. It thus happens that farmers do not obtain prices that would prevail if the competition in buying and selling were equal and if, at all times, the quality of the product were known. These low prices tend not only to encourage farmers to exploit their soil resources but to prevent them from making good soil losses by use of recommended conservation practices.

Second, these minimum prices are at the wholesale level, whereas the things farmers buy are on a retail level. In many

[20] *Ibid.*, pp. 152-3.

cases the retail prices are very high. Thus the difference between the prices received and the prices paid constitutes a second type of drain on the farmer's income. To off-set this low income most farmers tend to exploit their resources, especially their soil.

Third, the cost of farm credit for farm operation is much higher than for most types of businesses. Normally business units in other sectors of the economy can obtain credit at what are called "commercial rates." On the other hand, farmers must obtain credit not on a "firm" basis but on a personal basis. The high cost of production credit[21] reduces the farmer's net income. If the cost of credit were lower, then the farmers could afford to re-invest a part of their net earnings in soil conservation practices and to develop farming systems that would be less destructive of their soil resources.[22]

Remedial Measures

The dangers attending the destruction of soil resources have long been recognized. Even in the Colonial period and prior to the acquisition of the public domain attention was directed to soil depletion by such men as John Taylor, Edmund Ruffin, and Martin Phillips.[23] It was not, however, until the public domain had been largely transferred to private ownership that public attention was directed to what was termed "conservation of natural resources." At the outset the conservation movement was concerned largely with the preservation of forests, minerals, and water resources. However, about 1899, provisions were made for a study of our soil resources, and formal soil surveys were begun. These surveys were designed to obtain an inventory of our soil and to appraise their current condition. In recognition of the facts that had been collected and from observations regarding soil erosion and its effect on productivity the Congress, in 1933, created the Soil Erosion Service.[24] Two years later this service was transferred to the Department

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[21] See North Carolina Agricultural Experiment Station, *Technical Bulletin No. 80.*

[22] This argument for lower credit cost must be distinguished from "easy credit." All borrowed funds, whatever the cost, should be used effectively. Indeed in most cases the use of credit should be supervised by the lending agency.

[23] L. C. Gray, *History of Agriculture in the Southern States,* pp. 915-16. Washington, D. C.: Carnegie Institute, 1933.

[24] This service was provided for in the National Industrial Recovery Act of 1933.

of Agriculture, and its name was changed to Soil Conservation Service.[25]

1. Activities of the Soil Conservation Service. Under the Soil Erosion Service, attention had been directed primarily to soil injury caused by erosion.

Starting in 1933 (says Bennett[26]), soil conservation activities of the Federal Government were first focused upon a series of demonstration projects in each major type-of-farming area. All farmers within a given watershed were given an opportunity to enter into a 5-year cooperative agreement During this time technicians of the Soil Conservation Service surveyed each farm, laid out a system of conservation management, and aided the farmer in applying the new techniques of land use. Through these projects and similar work done in connection with Civilian Conservation Corps camps, and by the cooperative educational work of the agricultural extension services, an understanding of the value of soil conservation was developed among farmers of almost every State.[27]

This preliminary program, designed to teach farmers how to recognize soil injury caused by erosion and to help them provide ways and means, such as terraces, strip cropping, improved pastures and planting trees, was so successful that a new and more effective program was developed and put into effect. Writing on this, Bennett says:

. . The Government no longer needs to carry the idea of soil conservation to farmers, for farmers themselves are now taking the initiative in conservation work Of particular significance has been the speed with which soil conservation districts have been organized These local public agencies are established under State laws by majority vote of land users in a given area and are governed by a board of supervisors consisting primarily of locally elected farmers Soil conservation districts are public bodies with which the Federal and State Governments can enter into cooperative agreements to provide technical help in surveying soil conservation problems and to work out methods for the better use of the land. In the case of soil conservation districts the Soil Conservation Service is cooperating not with individual farmers, as in the demonstration projects, but with locally organized groups of

[25] Soil conservation is not limited to those services prescribed under the Soil Conservation Act of 1935. The Omnibus Flood Control Act of 1936, Title III of the Farm Tenant Act of 1937, the Water Facilities Act of 1937, and the Cooperative Farm Forestry Act of 1937 are basic laws dealing, at least in part, with soil conservation and under which the Soil Conservation Service operates

[26] H H Bennett, Chief of the Soil Conservation Service

[27] U S. D. A. *Yearbook*, 1940, "Farmers in a Changing World," p. 433

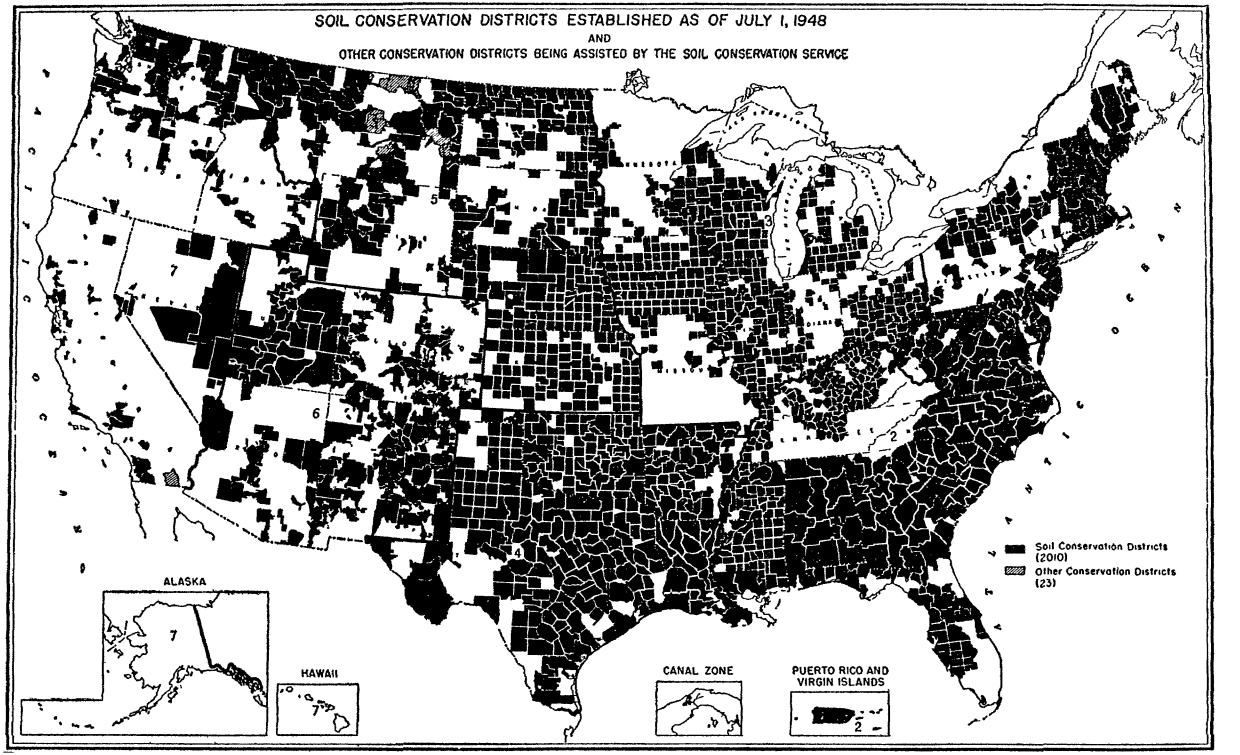
SOIL CONSERVATION DISTRICTS ESTABLISHED AS OF JULY 1, 1948
AND
OTHER CONSERVATION DISTRICTS BEING ASSISTED BY THE SOIL CONSERVATION SERVICE
Soil Conservation Districts (2010)
Other Conservation Districts (23)
ALASKA
HAWAII
CANAL ZONE
PUERTO RICO AND VIRGIN ISLANDS

FIG. 18

farmers who, on their own initiative, are working out solutions to their soil conservation problems.[28]

The soil conservation districts referred to by Bennett are legal entities provided by state laws. In 1948 there were 2,043 such districts covering about 1,114 million acres on which some type of erosion control practices are in effect.[29] The types of practices, together with the acreage covered by each, are presented in Table 16.

TABLE 16

CONSERVATION PRACTICES PLANNED AND APPLIED UNDER THE SOIL CONSERVATION SERVICE, JUNE 30, 1947*

Type of Practice	*Practices Planned (000,000 acres)*	*Practices Applied (000,000 acres)*	*Per Cent Applied Is of Planned*
Contour cultivation	21.2	13 2	62.3
Cover crops	10.0	5.2	52.0
Stubble mulch	21.2	15 2	71 7
Strip cropping	6 0	3.4	56 7
Range properly stocked	57 3	35.5	62 0
Seeding range and pasture	13 5	5.8	43.0
Woodland improvement	10.7	4.8	44 9
	(000)	(000)	
Farm and ranch ponds (number)	114.5	78 0	68 1
Tree planting (acres)	622.9	286.0	46.0
Terraces (miles)	1,106 6	442.5	40 0
Diversions (miles)	27.4	11 6	42.3
Farm drainage (acres)	3,721.2	1,811.7	48.7
Farm irrigation:			
Land preparation (acres)	1,049.6	375.8	35.8
Improved water:			
Application (acres)	2,093.9	1,132.6	54.1

* Source· Report of the Chief of the Soil Conservation Service, 1947, Table 8, p. 22. U. S Department of Agriculture

2. Purchase of submarginal land. Under private ownership the destruction of the soil surface has been so great that many farms are no longer productive, or the productivity is too meager to "maintain a decent standard of living." The number of families affected in 1933 has been estimated as 500,000. The normal soil conservation methods were not applicable to such

[28] *Ibid.*, p. 433.

[29] Report of the Chief of the Soil Conservation Service, 1947, Table 4, p. 5. U. S. Department of Agriculture.

farms. To cope with these problems, the Congress, under the Bankhead-Jones Farm Tenant Act of 1937, provided 50 million dollars for the purchase of submarginal lands. Although not all of this sum has been used, some 11 million acres of submarginal land has been acquired by the United States Government. The land thus acquired has been "converted into pastures, ranges, forests, wildlife preserves, and public recreation areas. Much of this formerly submarginal land has been leased to stockmen or farmers living in the purchase areas, which has enabled them to shift to a less intensive type of farming, featuring pasture and livestock in place of cash crops."[30]

3. Farmers Home Administration.[31] This Federal agency has been active in promoting the adoption of soil conservation on all of its projects.

In counties where soil conservation districts have been organized, workers from the Soil Conservation Service visited many of the farms to help develop basic soil conservation plans. Farmers Home Administration supervisors helped establish many of these districts and are encouraging borrowers to take advantage of them. In some states, formal working agreements have been signed by both agencies outlining ways in which their workers will cooperate in helping borrowers make full use of conservation practices.[32]

4. Tennessee Valley Authority. An ambitious regional program of resource conservation and development was undertaken by the Federal Government in 1933 when the Congress created the Tennessee Valley Authority. Among the functions of the Authority, as stated in the TVA Act, were (1) to control the flow of the Tennessee River and to make it navigable from Knoxville to the Mississippi, (2) to develop hydroelectric power for commercial and farm use, (3) to develop facilities for the production of phosphate fertilizer, and (4) to provide for reforestation and use of marginal lands.

Under the various programs that have been developed and put into effect by the Authority more than a million acres in the Tennessee Valley have been shifted from row crops to close-

[30] U. S. D. A. *Yearbook*, 1940, "Farmers in a Changing World," p. 439

[31] Formerly called "Farm Security Administration," this agency is engaged in promoting farm ownership and improving tenant conditions

[32] "Strengthening the Family Farm." A Report on Activities of the Farmers Home Administration in the 1946-47 Fiscal Year. Washington, D. C. · U. S. Department of Agriculture, November 15, 1947.

growing grains and pasture crops, and more than a million acres have been terraced. Some 140,000 acres of the 1,000,000 acres in need of reforestation have been reforested.[33] In addition to these activities about 860,000 tons of concentrated phosphate fertilizer have been manufactured and distributed to farmers and experiment stations.

5. Agricultural Adjustment Administration. Beginning in 1934 this Federal agency, the chief objective of which is the control of farm production, has been a factor in the conservation of our farm land resources. Under the several acts[34] that have determined the nature and scope of its activities, the Agricultural Adjustment Administration has and can influence materially the use of our farm land. In 1936, because of changes in the original act made necessary by the decision of the Supreme Court, the control of production was exercised by the shifting of production from the basic commodities to production of soil conservation crops. Under this program,

> Approximately 4,000,000 farmers cooperated in the 1936 agricultural conservation program and it is estimated that approximately two-thirds of the total cropland of the nation was covered by applications for grants. Approximately 31,000,000 acres were shifted from soil-depleting bases under the program, and soil-building practices that qualified for payment were carried out on approximately 53,000,000 acres on participating farms, or perhaps twice the acreage on which such practices would normally have been carried out.[35]

6. State agencies. State agencies, particularly the State Experiment Stations and State Extension Services, have been interested in the conservation of farm resources. The contribution of these agencies to soil conservation is not available in summary form. What is known is that the greater part of Federal and State appropriations for agricultural research and extension

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[33] Annual Report of the Tennessee Valley Authority, 1947, p. 27.

[34] Created in 1933, the nature and scope of the agency has been modified by congressional action Originally this agency was designed to control the production of basic commodities, specifically corn, wheat, cotton and tobacco "But it was realized within the Agricultural Adjustment Administration that conservation was a basic agricultural problem and that both conservation and production control needed to be considered in any continuing agricultural program. . . . As a result, the adjustment programs of the Agricultural Adjustment Administration were designed to encourage the shifting of acreages diverted from the chief soil-depleting crops to crops or uses which would conserve or improve the soil and check or prevent erosion " (U. S D. A. *Yearbook*, 1940, "Farmers in a Changing World," p. 280.)

[35] U. S. D A *Yearbook*, 1940, "Farmers in a Changing World," p 281.

services has been directed to the technical aspects of agricultural production.[36] Although the distribution of these appropriations to specific technical tasks, such as crop rotations, fertilizer practices, pasture development, strip cropping, terracing and drainage, all of which affect the rate of soil exploitation, is not available, yet the total expenditure for such practices must have been large.

In support of this thesis a few examples of current research in the field of soil conservation may be cited. According to the 1947 Report on Agricultural Experiment Stations, the Illinois station in cooperation with the U. S. Department of Agriculture has been engaged in "extensive long-time studies" in conservation farming. These experiments have shown that "farms with well-developed soil conservation programs in comparison with farms of the same size without such programs gave increased incomes of $780 to $1,330 as benefits from conservation. Even when compared on the basis of farm income from 1935 to 1939, the conservation farms gave increases of $460 to $780 annual income. Besides increasing current income, conservation practices prevent soil erosion and loss of capital resources and thus leave the farm more productive than it was before."[37]

The Wisconsin station reported:

> Soil-conserving farmers surpassed their neighbors not using such practices by greater increases in crop and nutrient yields, in livestock numbers, and in gross receipts and net incomes. Soil-conserving farmers were able to increase their output of all the important feed crops—corn, small grain, and hay, whereas other farmers increased only their grain and corn yields. Considered on the basis of total nutrients produced, the increase was 20 per cent for soil-conserving farms and 12 per cent for the others [38]

Contour cultivation with terracing on wheatland, as reported by the Oklahoma station, increased the yields by two bushels after these practices were in effect three years.[39] As the Report states:

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[36] See Chapter 24 for total appropriation for State Experiment Stations and Extension Services.

[37] "Report on the Agricultural Experiment Stations, 1947," p. 27. U. S. Department of Agriculture, January, 1948.

[38] *Ibid.*, p. 28.

[39] *Ibid.*, p. 28.

These examples, together with results in previous reports on the stations, show that farmers under widely varying conditions can, through the effective use of simple and inexpensive farming systems, increase yields and secure greater returns through conservation farming practices.[40]

Cost of Soil Injury

It is not possible to estimate even roughly the cost of soil destruction to this nation. The reason why the cost cannot be estimated is that the effects of soil injury are not confined to the decrease in productivity but affect a wide variety of other social and economic activities. The elimination from productivity of some 76 million acres of land is indeed a high social and personal loss, but the indirect effects of soil injury are of even greater significance. Evidence of the cost to society of soil destruction is to be found in specific studies. For example, Garin and Forster, in a study of the cost of the water supply for 22 cities located in the Piedmont of North Carolina, found that the annual loss of reservoir capacity was 233 acre feet out of an original capacity of 35,900 acre feet, or 0.65 per cent. At this rate of siltation it was estimated that these reservoirs would not be able to supply the necessary water after 25 years.[41] For some of these reservoirs the rate of siltation was as high as 1.85 per cent.

To the loss of reservoir capacity must be added the annual cost of water purification. To clarify and also to purify water for public use is an item of considerable expense and tends to vary directly with the amount of siltation. For the 22 cities the annual cost for these processes in 1939 was $945,000. Of this sum about 10 per cent or $95,000 could be eliminated by the adoption of recommended soil erosion practices.

The monetary outlays of governmental and quasi-governmental agencies engaged in the task of soil loss prevention give another indication of the cost of soil injury. Since its inception in 1933 the Soil Conservation Service has expended $342,907,858. These figures represent only direct appropriations for research and operations. They do not include direct appropriations for

[40] *Ibid*, p. 28.

[41] Alexis N. Garin and G W. Forster, "Effects of Soil Erosion on the Cost of Public Water Supply," *Economic Research*, Soil Conservation Service, EC 1, July, 1940.

Land Utilization and Retirement of Submarginal Lands or for Water Conservation and Utilization Projects. Neither do they include funds received by our Service by allotment and transfer for such purposes as flood control, Civilian Conservation Corps, or various other relief funds, such as Work Projects Administration, Public Works Administration, and National Industrial Recovery Act, or working funds advanced to us for specific jobs for other agencies or trust funds advanced by state and local agencies for cooperative work. In addition, farmers have received $4,221,668 from the Agricultural Adjustment Administration as part payment for soil erosion practices.[42] These costs, although of considerable magnitude, represent only a small part of the total cost. The individual farmers, local governmental units, the experiment stations, and extension services are spending annually large sums in an attempt to stabilize soil surfaces.

The Future of Soil Conservation

There are two points of view with respect to the future of soil conservation. To the objective scientist the problem appears difficult and elusive. The optimist, on the other hand, points to the fact that production, even on basically poor soil, can be increased by the use of appropriate fertilizer, improved seeds, and the adoption of recommended cultural practices. That this is a basis for optimism is readily conceded, but it is equally true that the destructive forces are constantly at work and are difficult to control. The off-setting effect of fertilizer, higher yielding seeds and plants, and approved practices is not quite enough to provide a satisfactory margin of safety. "There can be but one explanation for the stubbornness with which acre yields resist the farmers effort to improve them. The natural productive capacity of the land has been deteriorating at a rate almost fast enough to off-set all of these soil improvements in soil and crop management. With every step ahead we have slipped back almost if not quite as far."[43]

It would be a mistake to "view with alarm" the destruction of our soil surface. "The road to future progress is the un-

[42] From 1936 to 1946. *Agricultural Statistics*, U. S Department of Agriculture, 1946, p. 655; 1947, p. 619.

[43] R. M. Salter, R. D. Lewis, and J A Slipher, "Our Heritage—the Soil." Ohio Agricultural Extension Service, *Bulletin No. 175*, 1936, p. 5

dramatic way of painstaking scientific research on our many kinds of soils to be followed by new inventions, the discovery of new relationships and steady improvement in soil selection and management systems to give high yields of nutritious crops on a secure basis. The prospects are excellent, with hard, quiet work by both scientists and farmers."[44]

To this note of optimism the social scientists add words of caution. Soil conservation and "wise" use are affected by social, economic, and political arrangements and customs that are often expressed in the general term "the human factor." It is possible, and no doubt often feasible, to manipulate the physical factors of production. This is largely, although not wholly, the basis upon which the Soil Conservation Service operates. But how about the manipulation of the human factor? Charles M. Hardin, professor of political science at the University of Chicago, who has given much thought to this subject, is of the opinion that problems such as those associated with soil conservation and use cannot be solved without providing the necessary political arrangements. To a statement made by H. H. Bennett, Chief of the Soil Conservation Service, to the effect that physical factors will be manipulated according to "factual, technological elements of land use and land maintenance, rather than by promotional, exploitive, or political standards," Hardin reacted as follows:

> The statement suggests that we will have government by technologists rather than by politicians! Presumably this assumption enables one more readily to talk about the spread of land technology by decree. But the assumption is grave, indeed.
>
> There is a great body of literature upon the organization and control of political power; and very few of its students have advocated government by technology. Even if one comes to this conclusion, there are major questions as to the means whereby technologists are to come to power and to maintain it.
>
> But even technologists would be faced by essentially political questions as to how much of society's resources would be spent on soil conservation and how much, say, on education, housing, health, and nutritional programs—to say nothing of national defense.[45]

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[44] Charles E. Kellog, *Farm Policy Forum*, Vol. I., No. 4 (October, 1948), p. 12. Iowa State College Press

[45] *Farm Policy Forum*, Vol I, No. 4 (October, 1948), p. 7 Iowa State College Press.

Soil conservation and use appear to be, and indeed are, highly important and complex problems. It is important largely because of the dependence of population upon soil resources for their food supply. Our soil resources must be protected and wisely used if we are to survive as a nation and enjoy a high material standard of living. The problem is complex because it does not involve solely the manipulation of the physical factor but also the manipulation of the human factor. The physical, economic, social, and political causes are so varied that remedial measures are not easily devised. Such is the dilemma that confronts every modern nation, as indeed it has faced every nation of recorded history. The gradual recognition of the component parts of the problem by modern social and physical scientists, however, provides a base of hope that the dilemma may be resolved.

Questions

1. Why is the soil such an important factor of production?
2. Discuss the magnitude of the soil conservation problem. Indicate the extent of soil injury.
3. To what extent and under what conditions can the cropland area of the United States be expanded?
4. What are the chief causes of soil depletion?
5. To what extent does the desire for a higher standard of living encourage farmers to exploit their land resources?
6. How does armed conflict lead to the depletion of soil resources?
7. How do "traditional attitudes and institutions" affect the use of land?
8. How do systems of farming and tenure status lead to depletion of soil resources?
9. How do prices of farm products and the cost of credit lead to soil depletion?
10. What measures have been put into effect to prevent soil destruction?
11. What data are available to show the cost to society of soil injury?
12. Discuss briefly the future of soil conservation.

References

Bunce, Arthur C., *Economics of Soil Conservation.* Ames: Iowa State College Press, 1945.

———, "Soils and Men," U. S. D. A. *Yearbook,* 1938.

———, "Farmers in a Changing World," U. S. D. A. *Yearbook,* 1940, pp. 398-488.

CHAPTER 12

Economics of Land Tenure

AMONG the issues that face the modern world none are more dangerous than those that arise out of man's relation to the land. These are the tenure problems of present-day society, which stand out as clearly as beacon lights along a perilous coast. In the past, the failure of nations to recognize these problems and to take remedial action has led, on many occasions, to peasant revolts and, in some instances, to bloody revolutions.[1] Up to and including World War II, it was land or some unsolved tenure problem that was among the causes, and often was the chief cause, of national aggression. Today the tenure problems are still urgent, although land has been made much more productive by the use of capital in its various forms, by the application of technology, and by more skillful workers and managers.

Nature of Land Tenure

Land tenure includes all of the relationships growing out of the use of land. Thus, it has to do with the rights in land, varying from outright public ownership, under which individuals hold no rights except those reserved by society. As regards the latter, society has reserved for itself three limited but important rights—the right to tax, the right to police, and the right to acquire for public use. The rights of private owners on the other hand are exceedingly broad, encompassing as they do, all those not specifically reserved by society. Generally speaking they include the right to use and to abuse, to buy and to sell, to bequeath and to inherit, to subdivide and to enlarge, to mortgage and to foreclose.[2]

In addition to these three basic reservations, the State also retains a residual right called "escheat." The term "escheat" is used to describe the process by which the State takes over title to land that is no longer owned by private parties. If an owner dies without heirs competent

[1] N. S. B. Gras, *A History of Agriculture in Europe and America*, Chapter V New York: F. S. Crofts & Co., 1940

[2] G. H. Aull, "A Suggested Program, Organization and Procedure for Land Tenure Research in the Southeast." Mimeographed (for discussion at the Blue Ridge Conference, July 20-23, 1946).

to inherit and leaves no will disposing of his land, the title to his property passes to the State through the process of escheat.[3]

The Present Tenure Situation

Although farm tenancy is common in the United States, American tradition and law permit, favor, and encourage ownership. In fact, the ideal farm is called the "family farm" and is owned and operated by the farmer and his immediate family. This ideal had its origin in the distant past. With the decline of feudalism in western civilization there emerged the idea of individual liberty, which carried the implication that persons, as well as states or feudal landlords, should have the right to own land. Indeed, the idea of individual freedom gave rise to a definite theory of social and economic organization that is known today as political democracy. This theory, among other tenets, holds that the freedom should be as nearly absolute as possible—that is, the state or society should permit the individual to be guided by his own interests and not by those of the state. This idea has been crystallized recently in the statement "The state exists for the individual, not the individual for the state."

Political democracy was adopted by this nation when it was created, and its tenets were embedded in the Constitution. As a part of the scheme to make democracy a fact, a land policy was developed that provided among other things for the creation of an agricultural economy based upon private ownership of land.

A rural society, based upon this idea has been difficult, if not impossible, to achieve. At the beginning of our national life, the land in the thirteen original states was not available for redistribution. In the South most of the land was held in large plantations, which were operated by slaves. It is true that family farms predominated in the northern states, but no new land was available for their further extension. The nation, therefore, had to depend upon its public domain, which ultimately consisted of 1,309,591,680 acres. It was with these lands that an attempt was made to create an agricultural economy composed of family farms.

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[3] Max M. Tharp, "Farm Land Ownership in the Southeast." Unpublished manuscript of Southeast Regional Land Tenure Committee.

The extent to which this ambitious program has succeeded is indicated only in part by existing data. The Census of 1880 was the first to collect data on ownership and tenure. At that time 25.5 per cent of the 4,008,907 farms were operated by tenants. From 1880 to 1930 the number of farms operated by tenants increased to 42.4 per cent. This apparently was the high point because the figure for 1935 was 42.1, for 1940, 38.7; and for 1945, 31.7. (See Figure 19.)

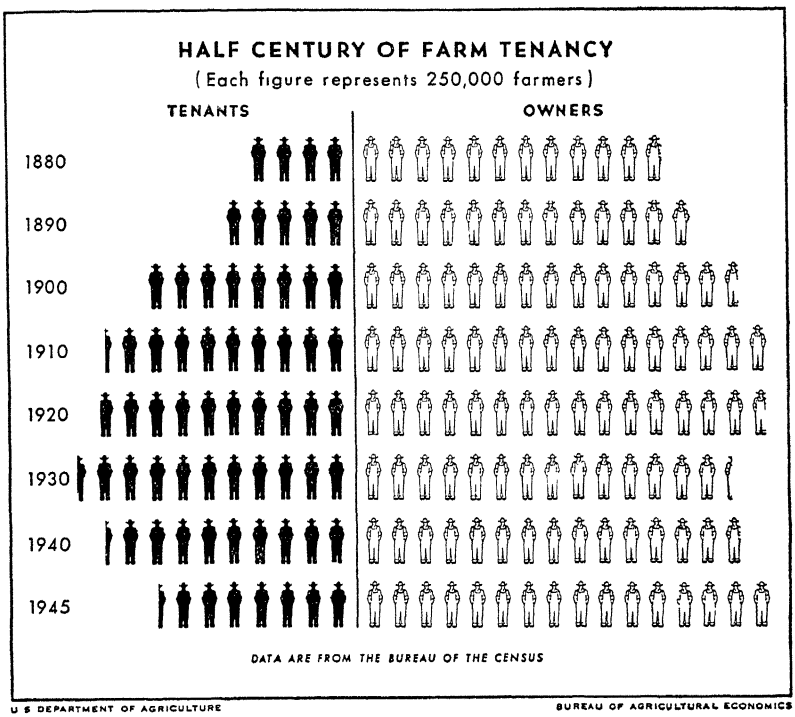

FIG 19

The extent of tenancy, however, is much greater than these data indicate. About 10 per cent of the farms in 1930 and slightly more than 11 per cent in 1945 were classed in the part-owner group. Again the increase in full owners during the past two decades is more apparent than real because the gain in the number of owners has been due largely, if indeed not solely, to an increase in the number of small so-called "subsistence farms." This is shown by the change, not in the number of

owners, but in the total land operated by owners during those years in which tenancy has been declining. In 1930 the total land operated by full owners was 372,449,683 acres as compared to 412,357,893 acres in 1945, or a net gain of 40 million acres. This would appear as a substantial gain in ownership, but in 1930 full owners operated about 38 per cent of the total land in farms, whereas in 1945 they operated only about 36 per cent. The increase in ownership did not keep up with the increase in the land in farms.

It seems clear from these data that the objective of creating a land-owning class of farmers in this country has not been achieved. Nor does it now appear possible that such an ideal can be accomplished. In place of an agricultural economy based upon landowning farmers, there has been created an economy in which three large classes have emerged, namely, landowning farmers who operate the farms they own, a tenant class, and a laboring class. There is also emerging a managerial class of farm operators who operate and manage farms for a fixed sum of money or its equivalent.

Tenure Status

Relationships that arise from man's association with farm land include a number of persons or agencies, each of which may have a tenure status. Of these the following are the more important:

1. Farm owner. A farm owner is a person who holds property in fee simple.[4] The term "fee simple" means that the owner may dispose of his property at will, he may alienate it (that is, convey or transfer), and, within wide limits, he may use it as he desires. "He may go so far as to injure or destroy it, provided his action does not amount to a nuisance."[5]

A full owner has also the right to mortgage his property. If he does so, however, he creates a *lesser* estate since the mortgagee has certain legal rights. In the case of a mortgaged

[4] The term "fee simple" applies to full owners. There are other forms of ownership, such as fee tail, which limits the transfer of property to lineal heirs, a base fee, which depends upon the fulfilment of a contingent qualification or limitation or the occurrence of a specified event, and primogeniture, which is an exclusive right of inheritance belonging to the first born.

[5] Reprinted from *Land Tenure Policies at Home and Abroad*, by Henry W. Spiegel by permission of The University of North Carolina Press. Copyright, 1941, by The University of North Carolina Press.

farm the owner may not wilfully destroy any physical assets that are covered by the mortgage. Often a clause is inserted in the mortgage contract to the effect that certain physical assets, such as growing timber, cannot be removed without the consent of the mortgagee.

2. Part owner. A part-ownership arrangement emerges when a farmer owns a part of the land he operates and rents additional land. In the status of an owner, he has the same rights and privileges as a full owner. His rights in the land rented may vary from those enjoyed by full tenants (see item 3) to no right at all as in the case of some croppers (see item 5).

3. Farm tenant. A farm tenant is a person or agency that acquires the use of property from an owner. The rights of a tenant are always less than those of a full owner. Whereas the full owner has the right to make use of his property as he sees fit, the tenant has no such right to use the land he rents. He must abstain from abusing the land or wasting its properties. In the absence of a contract to the contrary, the tenant is prohibited by law from removing buildings or other permanent improvements that he may have created during his tenure.

4. Farm laborer. A farm laborer is a person who performs some manual work for a stipulated wage. A laborer has no rights to possession. Although the laborer has no rights in land, his welfare is affected by the type of land tenure under which he must work. The chief reason why this is true is that wages are determined by productivity, and productivity may be, and usually is, affected by the conditions under which land is held and operated. If the tenure system, as in the present situation, does not provide in law for the efficient use of land, it is obvious that the wages of laborers may be much lower than if reasonable minima in its use were required.

5. Cropper. A cropper is essentially a farm laborer since he is not a legal tenant. He does not have any property rights to land, livestock, or equipment. The only difference between a laborer and a cropper is that the laborer receives a stipulated wage, whereas the cropper receives a specified share of the crop. In writing on this topic, Ely and Wehrwein make this significant observation:

> In determining whether or not specific arrangements do or do not create a lesser estate, the courts have established several principles.

The payment of a cash rent has been considered to imply the intention to enter into landlord-tenant relationships. Share rent arrangements may or may not imply the creation of a tenancy. The intention of the parties as reflected in the wording of the agreement is usually considered as governing. If the instrument of the lease speaks of the owner's portion as "rent," the courts usually hold that the intention was to create a tenancy. However, if the owner retains any supervision of the farming operations, courts have considered it a tendency to show that there is no tenancy because the cultivator does not enjoy the full possession of the land If no tenancy is created there is only a cropper contract. Some states have, by statute, set up the difference between the two; for instance, in Georgia and South Carolina all share-rent arrangements are cropper contracts In these states "standing renters" are considered to have the same status as cash renters, namely, that of tenant and not of cropper, which accounts for the unusual number of tenants of this class in the two states In most of the southern states, the renting arrangement under which the landowner furnishes all the requisites of production except the labor and receives one-half of the product is denoted by the statutes as a "cropper contract."[6]

6. Manager. A manager is a person who operates a farm for others. He has, as the laborer and cropper, no legal rights to land, equipment, or buildings. He manages the farm for a stipulated salary, or a combination of salary and percentage of the profits.

Geographic Distribution of Tenure Groups

There is no consistent tenure pattern for the United States as a whole; it varies from state to state, but more especially from one agricultural region to another.

Farmers who owned all of their land accounted for about one-half of the 6 million farms in 1940. The percentage of all operators who were full owners varied widely by States, amounting to 89 5 per cent in Maine and only 20 8 per cent in South Dakota. There are some counties in the country in which over nine-tenths of the farms are operated by full owners. These are in contrast to other counties where this group accounts for less than one-tenth of all farmers.

About one-tenth of the total farms, or one out of six owner farms, were operated by part owners in 1940. Farmers holding this tenure status operated 30.7 per cent of the farms in Montana but only 2.9 per cent of those in Mississippi.

Opportunities and advantages for owners incident to renting additional land are matters of much greater significance in the West North

[6] From R. T Ely and G. S Wehrwein, *Land Economics*, p. 82. By permission of the Macmillan Company, publishers.

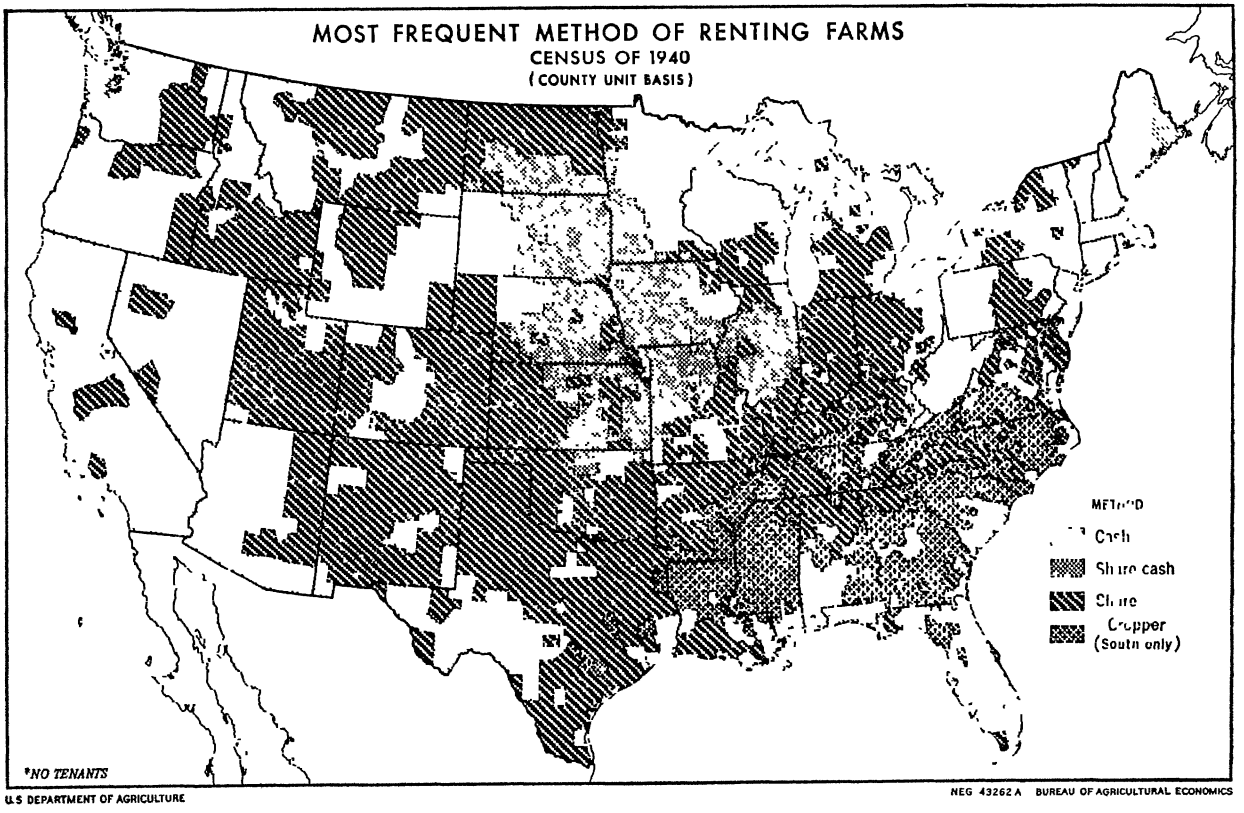
MOST FREQUENT METHOD OF RENTING FARMS
CENSUS OF 1940
(COUNTY UNIT BASIS)
METHOD
Cash
Share cash
Share
Cropper
(South only)
*NO TENANTS
U.S DEPARTMENT OF AGRICULTURE
NEG 43262 A BUREAU OF AGRICULTURAL ECONOMICS

FIG. 20

Central States, where 28.3 per cent of all owner farms were operated by part owners, than elsewhere in the country. Nearly one-fifth (19 2 per cent) of the farmers in the owner group rented part of their land in the Western States as compared to 14 per cent for the South. In two States, North Dakota and South Dakota, and in a total of 198 counties throughout the nation, part owners outnumbered full owners. Of course, these counties were heavily concentrated in the Dakotas but they were also numerous in western Kansas and in the eastern parts of Montana, Wyoming, and Colorado.[7]

Farms operated by managers are relatively few in number. In 1945 only 0.66 per cent of the farms in the nation were operated by managers. The states having one per cent or more of the farms operated by managers are: Arizona, California, Colorado, Connecticut, Delaware, Florida, Maryland, Massachusetts, Nevada, New Hampshire, New Jersey, New Mexico, New York, Pennsylvania, Rhode Island, Vermont, and Wyoming.

It should not be concluded from these data that farms operated by managers do not play an important role in American agriculture.

. . . in 1939, these few farms (0.6 per cent of the nation's total) supplied 4.2 per cent of the value of all farm products, and of the group of farms producing commodities valued at $10,000 or more, 11 per cent were manager operated. There were 6,418 manager-operated farms in this high income group, about one-tenth of one per cent of the total for the country; yet products grown on these units were valued at an average of $37,854 per farm and accounted for 3.1 per cent of the nation's total value of products.[8] (Also see Chapter 5.)

Tenancy exists throughout the nation but is more prevalent in some sections than in others. It follows, or tends to be associated with, cash crop production.

The percentage of all farms that are tenant operated is relatively high in most areas where production of the major annual cash crops predominates, and relatively low where dairying, livestock production, fruit and vegetable growing, and subsistence types of farming are important. Tenancy is most prevalent in the Cotton Belt, particularly in the more fertile parts, and in the heart of the Corn Belt. The rate is only a little lower in the less productive counties of the corn-producing

[7] "Farm Tenure Improvements in the United States. Policy Objectives, Problems, and Recommendations," p. 38. Washington, D. C.: U. S. Department of Agriculture, 1945.

[8] *Ibid.*, p. 43.

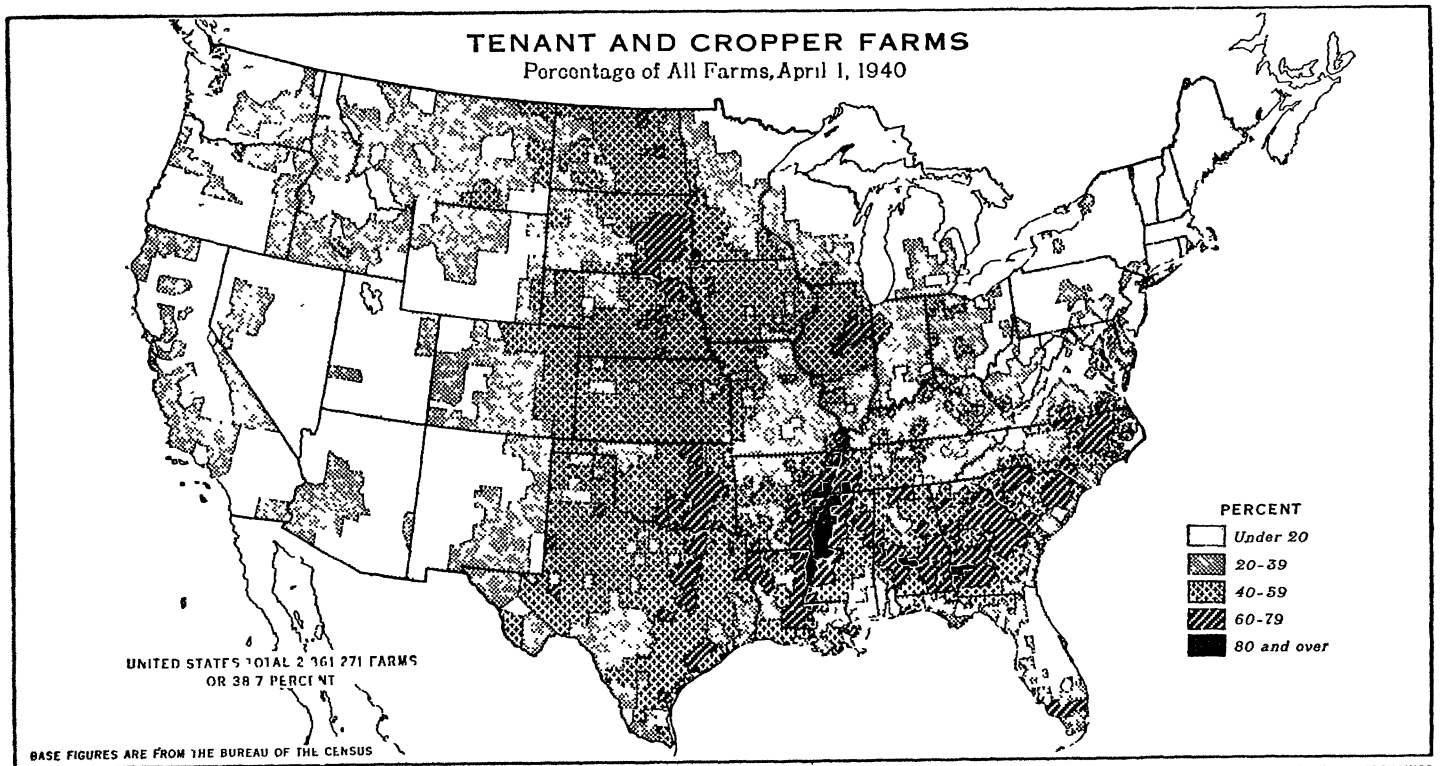
TENANT AND CROPPER FARMS
Porcentage of All Farms, April 1, 1940
PERCENT
Under 20
20-39
40-59
60-79
80 and over
UNITED STATES TOTAL 2 361 271 FARMS
OR 38 7 PERCENT
BASE FIGURES ARE FROM THE BUREAU OF THE CENSUS
U S DEPARTMENT OF AGRICULTURE
NEG 39667 BUREAU OF AGRICULTURAL ECONOMICS

FIG. 21

area and in the more humid parts of the wheat-producing states. Although less than half of all the nation's farms are in the cotton states, more than three-fifths of all tenant farmers live in the 16 states that comprise the South. . . . (Figure 21)

Share croppers are most numerous in the rich river bottom lands of western Mississippi and eastern Arkansas, where cotton dominates the agricultural economy, and also in the adjacent delta counties of southeast Missouri.

Share tenants are somewhat concentrated in the eastern part of the Corn Belt and in most of the Great Plains and Western Mountain States Cash tenants are relatively most numerous in the leading dairy states, including Wisconsin and Minnesota and all the New England and Middle Atlantic States, and also in the Pacific Coast States and in Arizona and Nevada. In the Corn Belt and in the eastern Great Plains States share-cash tenants are the most prevalent group.

Renting land is not confined to tenants and croppers alone, since part owners rent about one-half of the land that they operate. When the land that is leased by part owners is added to the land leased by tenants and croppers the geographic incidence of renting looks quite different than when only the number of rented farms is considered. . . . The greatest concentration of tenancy is in the Mississippi Delta, in the good land areas of the Southeast, and in scattered parts of the Corn and Wheat Belts. However, the counties in which at least half of the land was under lease to the operator in 1940 is concentrated in the five plains states—North and South Dakota, Nebraska, Kansas, and Oklahoma—and also in Iowa and Illinois.[9]

Some Problems and Characteristics of the Tenure Groups

Tenure classes vary in many respects. There are wide differences in the size of the farms they operate, in their education, income and levels of living, health, landlord-tenant relations, and national and state policies affecting tenure. Each of these problems and characteristics will be considered briefly.

1. Size of the farm. The size of the farm that a tenure group operates is significant in that it may, and indeed does, affect its economic and social status. This aspect of the subject is stated in a recent report as follows:

> . . . Manager farms were largest of all tenure groups, with an average of 1,830 acres. (1940) The average size for other groups was: part owners, 488 acres; tenants (including croppers), 132 acres; full owners, 124 acres; and croppers, 43 acres. On the basis of the amount of cropland harvested, the various tenure groups fell in the same order of importance. However, the variation in size was less pronounced.
>
> Although part owners made up only 10.1 per cent of the total number

[9] *Ibid.*, pp. 47, 48, 50.

of farms, they operated 22 1 per cent of the land in harvested crops. Conversely, the full owners represented 50.6 per cent of the farms and harvested only 35.9 per cent of all cropland; and share croppers made up 8 9 per cent of the farms and worked only 4.0 per cent of the cropland harvested.[10]

2. Education. Tenure groups vary in their ability to obtain a formal education. Results of studies in certain areas of the nation show that owners generally have been able to educate their children to a much greater extent than have any other tenure group. The children of tenants, croppers, and laborers have not been successful in obtaining a formal education. These groups tend to be, especially in the South, the underprivileged class of our rural society. McMillan, in a study of relief families in Oklahoma, found that 10 per cent of the farm laborers had no formal education as compared to 3.0 per cent for owners and 4.3 per cent for tenants. Although the differences in formal education between owners, tenants, and laborers were not great, on the whole, even for relief clients, the owners had succeeded in obtaining more education than the other tenure groups.[11]

In five rural areas of North Carolina in 1935, 9.4 per cent of all owners (white and colored) had no formal education, 45.2 per cent had completed seven grades, 10.9 per cent were graduates of high school, and 1.6 per cent were college graduates.[12] Tenants' education was much less than that of owners. For this group the percentage distribution was: no formal education, 8.3 per cent; completed seven grades, 37.7 per cent; graduating from high school, 5.1 per cent; and graduating from college, 0.4 per cent. The records for croppers and laborers are: cropper —no formal education, 16.2 per cent; seven grades, 23.9 per cent; high school, 2.5 per cent; laborers—no formal education, 16.7 per cent; seven grades, 18.4 per cent; and high school, 0.7 per cent. None of the croppers and farm laborers were college graduates.[13]

[10] *Ibid.*, p. 53.

[11] Robert T. McMillan, "A Social and Economic Study of Relief Families in Ottawa County, Oklahoma, 1934," Oklahoma Agricultural Experiment Station, *Technical Bulletin No. 2.*

[12] The difference between the percentage figures given and 100 per cent is made up of those who may have started work above the first grade but never completed seven grades or those who did not graduate from high school or college.

[13] C. Horace Hamilton, "Recent Changes in Social and Economic Status of Farm Families in North Carolina," North Carolina Agricultural Experiment Station, *Bulletin No. 309*, May, 1937, p. 169.

A recent survey, the results of which have not yet been published, tends to substantiate further the contention that owners have been more successful in obtaining a formal education than any other tenure group. These data indicate that 58 per cent of the owners and part owners completed 5 to 8 years in graded schools, as compared to 49 per cent for tenants and 33 per cent for croppers. High school attendance was about 22.0 per cent for owners, 19 per cent for tenants, and 4 per cent for croppers. No tenants had attended college, whereas about 5 per cent of the owners had done so.

3. Income and levels of living. One of the most conspicuous aspects of our rural economy is the relatively low income of farm people. Generally speaking, the rural farm population belong to the marginal or sub-marginal income groups of our population.[14] Within the rural farm group, however, the conditions of individuals vary from abject poverty to opulence. In not a few instances owners have been hard pressed to obtain incomes and levels of living equal to those enjoyed by tenants. Croppers and farm laborers are usually, although not always, in the lowest income group.

a. Income. Information needed to substantiate these statements is widely scattered throughout the literature on farm tenure. Studies made in Arkansas[15] in 1935 indicate that the net annual cash income of cash renters in the Delta Area was about $325 as compared to $188 for share-croppers and $205 for farm laborers. In another part of the state, the Coastal Plains Area, the net income of owners was $553 as compared to $367 for renters. For the Hilly Upland Area owners received $604 as contrasted to $424 for renters.[16] Timmons in a study of landlord-tenant relations in Missouri found that the average income of owners was $942 as compared to $578 for tenants.[17]

A study made by the Kentucky Experiment Station in 1937

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[14] John D. Black, *Parity, Parity, Parity*, Chapter IX. Cambridge, Mass : Harvard Committee on Research in Social Science, 1942; and *Agricultural Reform in the United States*, Chapter I. New York: McGraw-Hill Book Company, Inc., 1929.

[15] "Land Tenure in Arkansas." III—Income and Changes in Tenure Status of Share Renters, Share Croppers, and Wage Laborers on Cotton Farms. Arkansas Agricultural Experiment Station, *Bulletin No. 438*, June, 1943.

[16] "Land Tenure in Arkansas." I—The Farm Tenancy Situation. Arkansas Agricultural Experiment Station, *Bulletin No. 384*, Table 21, January, 1940.

[17] "Landlord-Tenant Relationships in Renting Missouri Farms," Missouri Agricultural Experiment Station, *Bulletin No. 409*, August, 1939, p. 13.

is somewhat more complete. According to this study, labor income of five tenure groups was as follows:[18]

Tenure Group	*Number*	*Labor Income*
Owner-operators	43	$287
Owner-operators using croppers	70	281
Operating tenants	29	346
Croppers	59	268
Regular wage hands	25	250

In Wisconsin, Hibbard and Black found that the net farm income for owners was $1,104, share tenants, $1,724, and cash tenants, $958.[19] Similar results were obtained by Pond in a study of farm tenancy in Minnesota.[20] Operator's labor earnings for owners were $825 and for tenants $1,276.

The incomes of the various tenure groups are perhaps more accurately indicated by the data obtained from the 1940 census.[21] The number in each major tenure group—owners, part owners, managers, and tenants—are classified according to gross income.[22] For the United States as a whole the difference in income of full owners, managers, and all tenants was more pronounced in the higher income brackets. This fact is shown diagrammatically in Figure 22. For the incomes ranging from $1 to $99, there were 64.3 owners and 32.8 tenants out of each 100 farm operators; there were 37.8 owners and 19.8 tenants when the income bracket was $10,000 or over. More managers are found in the higher than in the lower income brackets.

The distribution of owners and tenants by income group varies geographically. In the South (Middle Atlantic and South Atlantic States) the distribution is markedly different from that in the Northern (East North Central) and Pacific States (Mountain and Pacific). These differences are shown graphically in Figure 22. In the East North Central States there is a tendency for more owners and tenants to appear in the $1,000 to $1,499

[18] Labor income is defined as the total income less the operating expenses, less 5 per cent on the operating capital.

[19] "Farm Leasing Systems in Wisconsin," Wisconsin Agricultural Experiment Station, *Research Bulletin No. 47*, 1920, p. 59.

[20] "Farm Tenancy in Minnesota," Minnesota Agricultural Experiment Station, *Bulletin No. 353*, 1941, p. 45.

[21] "Analysis of Specified Farm Characteristics for Farms Classified by Total Value of Product," U. S. D. A. *Technical Monograph*. Washington, D. C., 1943.

[22] Income means the gross value of products sold, traded, or used.

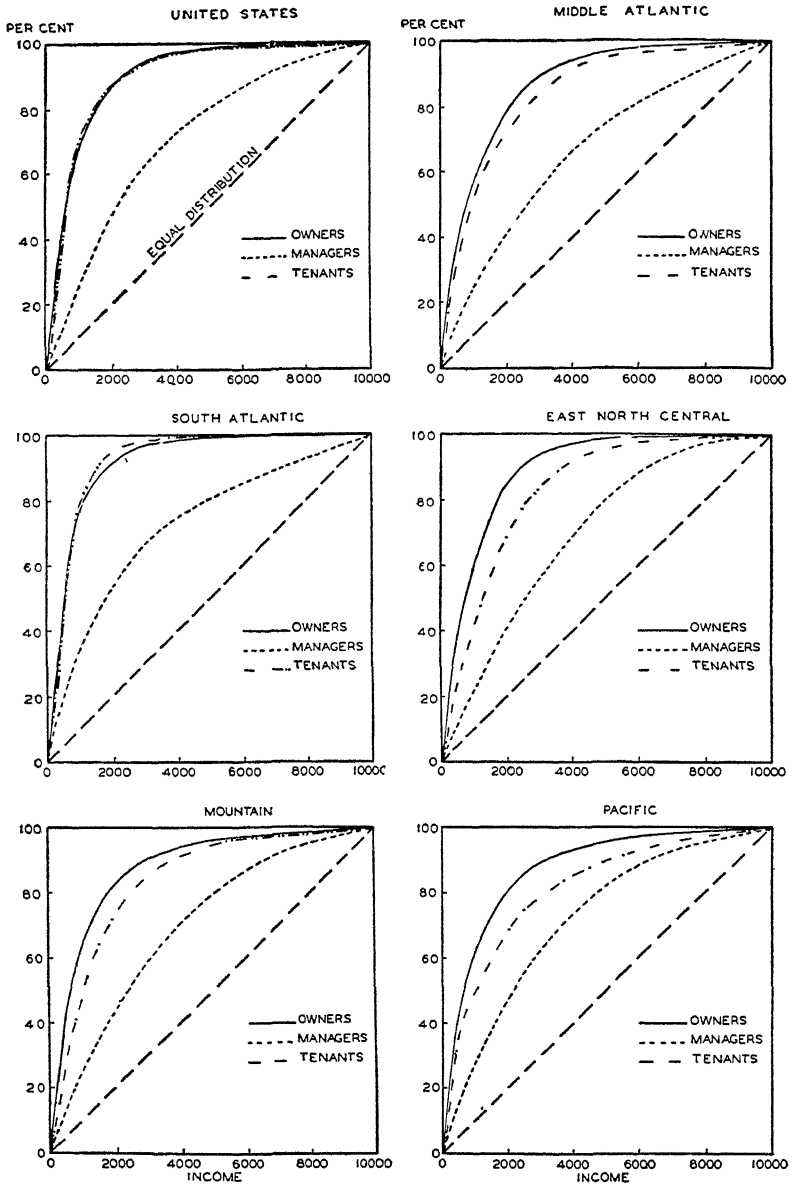

FIG. 22. DISTRIBUTION OF OPERATORS BY TENURE AND VALUE OF GROSS INCOME IN THE UNITED STATES, 1940.

income group. In these same states managers occur most frequently in the upper income brackets.

b. Levels of living. The concept of levels of living is complex. The term means the combination of things that contribute to human happiness and well-being. It is assumed that in any culture, such as the culture in the United States, happiness and well-being can be indicated by the possession of material things, ideas, and concepts of a definite way of life. In spite of its complexity, students have been able to determine the level of living of individuals by the use of "level of living index." This index is composed of a number of items among which are:

1. Per cent of rural-farm occupied dwelling units with fewer than 1 51 persons per room;
2. Per cent of rural-farm dwelling units not in need of major repairs,
3. Per cent of rural-farm dwelling units with running water;
4. Per cent of rural-farm dwelling units with electric lights;
5. Per cent of rural-farm dwelling units with radios;
6. Per cent of farms with milk cows;
7. Per cent of farms with hogs and pigs;
8. Per cent of farms with chickens;
9. Per cent of farms with fruit trees;
10. Per cent of farms with vegetables grown for home use;
11. Per cent of farms with gross income of $600 or more;
12. Per cent of farms reporting automobiles,
13. Per cent of farms reporting automobiles of 1936 or later models;
14. Median year of school completed by rural farm persons 25 years of age and over.[23]

This index when computed may be correlated with tenure status. The higher this index is (100 perfect), the higher the level of living. Sewell found that when such a scale was correlated with tenure, owners had a higher level of living than tenants, croppers, or laborers. The results for areas in Oklahoma, Louisiana, and Kansas were as follows:[24]

Tenure Status	*Oklahoma*	*Louisiana*	*Kansas*
Owner	61.4	61 5	71.8
Tenant	54.9	53.7	65.8
Cropper	...	50.9	...
Laborer	50.0	47.1	60.4

[23] William H. Sewell, "A Short Form of the Farm Family Socio-economic Status Scale," *Rural Sociology*, Vol. 8, No. 2 (June, 1943), p. 172.

[24] Adapted from William H. Sewell, "A Short Form of the Farm Family Socio-economic Status Scale," *Rural Sociology*, Vol. 8, No. 2 (June, 1943), p. 167.

The use of an index, however, is not necessary to obtain an idea of the level of living of an individual family. It can be determined roughly by associating tenure status with such things as telephones, radios, use of electricity, and running water in the home. When these items are related to tenure status, a higher percentage of full owners and part owners usually have these items than either tenants, croppers, or laborers. The percentage distribution, however, is not uniform throughout the nation. For example, the percentage of farmers having telephones in 1940 was much higher in the New England States than in the South Atlantic States. In the New England States over 50 per cent of the owners and 39.2 per cent of part owners had telephones, whereas in the South Atlantic States only 13.2 per cent of the full owners, 10.7 per cent of part owners, and 2.9 per cent of the tenants had telephones in their homes.[25]

4. Health. Information on the health of rural people not only is of a general nature but is also inaccurate. As McMillan has pointed out, "The lack of popular agreement in the terminology employed in describing various diseases and sicknesses tends to distort and obscure the actual facts."[26] Not only is popular terminology defective, but few scientific studies have been made in which qualified physicians have been used in the diagnosis of diseases and sicknesses. Until more studies have been made, nothing but general statements can be made regarding the health of rural people, and certainly no accurate comparisons can be made of the health of tenure groups.

Wilson and Metzler[27] found that part-time farmers' families were "in the best condition of health and farm owners' families the poorest. The laborers claimed better health than either the farm owners or tenants." According to these authorities tenants paid 9.7 per cent of their cash income for medical care as compared to 6.9 per cent for owners and 6.5 per cent for laborers. Furthermore, about one-half of all tenants' and la-

[25] "Farm Tenure Improvements in the United States: Policy Objectives, Problems, and Recommendations," p. 62. Washington, D. C.: U. S. Department of Agriculture, 1945.

[26] Robert T. McMillan, "Social Factors Related to Farm Housing in Southern Oklahoma," Oklahoma Agricultural Experiment Station, *Technical Bulletin No. T-22*, 1945, p. 15.

[27] Isabella C. Wilson and William H. Metzler, "Sickness and Medical Care in an Ozark Area in Arkansas," Arkansas Agricultural Experiment Station, *Bulletin No. 353*, 1938, p. 29.

borers' families were in debt for medical care, which was twice the degree of indebtedness of other tenure groups. It is probably correct to say that the owners, generally speaking, are in a better position to pay for medical services than any other tenure group. It is equally correct to say that the medical care available to any tenure group is not sufficient to maintain reasonable good health.

Important factors affecting health are the character of the diet and the amount of food consumed. On this subject much general and specific information is now available, but data on the effect of food on the health by tenure groups are still unsatisfactory. Moser[28] in a study of the food supply of rural families found a wide variation in the amount and kind of food used by tenure groups. The following tabulation indicates these variations in annual consumption of foods:

FOOD SUPPLY OF RURAL FAMILIES*

Product	*Owners*	*Tenants*	*Croppers*
Milk and milk products (gals)†	583 1	529 7	443 7
Total fats	435 3	424 6	408 8
Eggs (doz)	144 1	102 2	70 4
Meats (lb)	565 0	423 0	375 4
Potatoes (lb)	1,370.8	1,361 9	1,286 7
Dried legumes and nuts (lb.)	129 7	118 9	123 5
Green, leafy, and yellow vegetables (lb)	690 5	665 5	503 8
Tomatoes and citrus fruits (lb.)	457 4	535 7	371 9
Other vegetables (lb)	414 8	404 3	294 7
Melons (lb)	1,743.3	2,375 5	1,675 7
Total other fruits (lb.)	1,304.8	951 9	687.0
Flour products (lb)‡	2,375.3	2,415 2	2,358.4

* Source Ada M Moser, "The Food Supply of Rural Families in the Six-mile Area of Pickens County, 1939-40 and 1942-43," South Carolina Agricultural Experiment Station, *Bulletin No 360*, 1943

† Milk equivalent, produced on farms and bought combined.

‡ Includes cornmeal, wheat flour, spaghetti, and so forth.

These foods, from a dietary standpoint, were rated as good, fair, and poor. When so classed, the owners had by far the highest percentage of good diets, and tenants and share-croppers had the highest percentage of poor diets. "Almost 22 share-cropper families had food supplies that appeared to be definitely poor in nutritive value, and only one had a fully satis-

[28] Ada M. Moser, "The Food Supply of Rural Families in the Six-mile Area of Pickens County, 1939-40 and 1942-43," p. 38-40. South Carolina Agricultural Experiment Station, *Bulletin No. 360*, 1943.

factory supply." According to Moser, protective[29] foods—milk, lean meats, fresh eggs, vegetables, and fruits—were more abundant in good diets than in fair or poor diets.

Estimates of the nutritive values of these yearly dietaries are not presented because of the difficulties involved in interpreting such figures. However, it was observed that the nutrients most often found to be relatively low were ascorbic acid and niacin. About 50 per cent of the family dietaries provided less Vitamin C than is recommended by the National Research Council and 40 per cent of them less niacin. About one-fourth of the total number appeared to be low in calcium and in riboflavin. Thiamin was probably too low in a good many instances, but the figures failed to show it because of the large amounts attributed to locally ground meal, much of which was not actually consumed. Then, too, thiamin is easily destroyed during the preparation and preservation of foods, and no allowance was made for this loss when calculating food values. Flour was not being generally enriched when this study was made. Because of the probable over-estimation of cereal consumption, total protein, as calculated, did not often fall below the customary allowances for a family group. However, there was reason to question the quality of the protein in some of the more limited food supplies. Of the 41 dietaries given a rating of "poor" seven derived less than one-third of the protein allowance from milk, eggs, meat, and fish, 20 derived one-third to one-half of the estimated need from these foods, and only 14 derived more than half of the protein allowance for animal sources.

It may be concluded that about 30 per cent of these Pickens county rural families had home diets too poor in quality to provide for normal growth and development of children and that relatively few provided liberally all the nutritive factors needed for good growth and health.[30]

5. Landlord-tenant relations. The principal problems that emerge from the relation of the landlords with their tenants are leasing arrangements and contracts, stability of occupancy, payment for unexhausted improvements, protection of landlord's property, and unsatisfactory housing conditions.

For the large majority of tenants and landlords leasing arrangements are defective.

Most lease agreements between landlords and tenants involve nothing more than a short oral discussion covering such items as when the tenant will move on the farm, how many acres of the principal crops will be grown, what livestock will be kept, and how much rent will be paid.

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[29] A protective food is one that is rich in one or more of the essential vitamins, amino acids, and minerals.

[30] Ada M. Moser, *op. cit.*, p. 19.

Practically all other decisions are left to subsequent negotiations. This is particularly true where the landlord supervises closely the tenant's farming Usually, institutional landlords have comprehensive written agreements with their tenants, but they are customarily prepared by the landlord's lawyer with two major purposes in view: to protect the landlord's property and to assure collection of the amount of rent agreed upon Oral agreements and one-sided written contracts are the key to many of the shortcomings of the tenancy system Many agreements now in use set the stage for subsequent disagreements and poor quality farming [31]

It is usually impossible for tenants to make permanent improvements or to conserve the soil under ordinary tenure arrangements.

Provisions for compensating the tenant for the unexhausted value of improvements made by him are rarely included in rental arrangements This is one of the chief reasons why tenant-operated farms are frequently not as well maintained as are farms operated by owners. Tenants are likely to make few improvements when they have no assurance that they will be permitted to gain full benefit from them through continued use or through compensation for any unexhausted value remaining when they leave the farm.

Many rented farms do not have enough buildings or fences for the tenant to engage in livestock farming. Of course, it is the landlord's proper function to provide a fully equipped farm, but there are certain cases where the tenant could develop a better system of farming even though the landlord failed to supply the necessary improvements. For example, situations are numerous under which temporary or movable structures could be used to meet the practical requirements for livestock production. The tenant who may add the necessary movable buildings or temporary fences is not always protected by the law or the farm lease contracts—he is frequently not permitted to take with him movable improvements and facilities made at his own expense when he leaves the farm.[32]

Under normal conditions, rented farms are subjected to continued exploitation. Various methods have been suggested whereby this exploitation may be prevented or at least reduced.

The laws in many States try to protect the landlord's property by holding the tenant responsible for any damages that are committed to the farm real estate. In some States the law calls for triple damages Of course, these laws are not enforced. Neither are they enforceable

[31] "Farm Tenure Improvements in the United States: Policy Objectives, Problems, and Recommendations," p. 116. Washington, D. C.: U. S. Department of Agriculture, 1945.

[32] *Ibid*, pp. 119-120.

so long as the tenant is not protected with reference to improvements that he may make. A reciprocal provision that would compensate the tenant for certain improvements to the property and that would reimburse the landlord for any damages to real estate appears necessary before rented property can be fully developed and adequately maintained.[33]

6. National and state policies affecting tenure. One of the major defects in land tenure is the absence of adequate national and state policies affecting tenure. The state and Federal governments have hesitated to provide in law for the conduct of a vast agricultural industry. These governments have preferred to let the owners, landlords, tenants, croppers, and laborers solve their problems in "the good old American fashion." But, although this method perhaps worked no disadvantage to any tenure group when farming was less complicated, it is not applicable to a commercial type of agriculture. There are especially needed state laws regulating the conditions of tenancy. "In only four states" (North Carolina, Texas, Kansas, and Oklahoma) "has there been legislation dealing with landlord-tenant relationships which shows a clear intention of protecting the interest of the tenants."[34] To these four may be added Iowa, which has enacted a law governing tenant relationships. Most of these laws, however, do not provide for, or even mention, the rights of tenants for unexhausted improvements.

A Program of Action

Students have not confined their attention simply to investigating tenure conditions but have suggested lines of action designed to improve these conditions. The enactment of laws that would assist tenants in becoming landowners have been suggested. It is also recognized that a program that encouraged tenants to become owners would be futile if owners continued to lose their farms. To prevent this, it has been recommended that credit arrangements should be such that farmers could obtain needed credit at a lower rate of interest for a longer period and covering a higher percentage of the assessed valuation of their property.

There is need for a combination and expansion of the Federal

[33] *Ibid.*, p. 120.

[34] *Law and Contemporary Problems*, Vol. IV, No. 4 (October, 1937), p. 512. Durham: Duke University, School of Law.

Rehabilitation Program of tenants and croppers. The farm laborers also should be given some assistance. This is essential because "the great majority of farm laborers are only intermittently employed; their incomes are extremely low and uncertain."[35]

The several states of the Union could, through appropriate legislation, effect marked improvement in tenure conditions. It has been recommended that the legislatures of the several states enact laws relating to leasing contracts and landlord-tenant relations, taxation of farm land, and civil liberties.

1. Lease contracts. With respect to this subject, the following specific suggestions have been made:

(*a*) Agricultural leases shall be written.

(*b*) All improvements made by the tenant and capable of removal shall be removable by him at the termination of the lease.

(*c*) The landlord shall compensate the tenant for specified unexhausted improvements which he does not remove at the time of quitting the holding, provided that for certain types of improvements the prior consent of the landlord be obtained.

(*d*) The tenant shall compensate the landlord for any deterioration or damage due to factors over which the tenant has control, and the landlord shall be empowered to prevent continuance of serious wastage.

(*e*) Adequate records shall be kept of outlays for which either party will claim compensation.

(*f*) Agricultural leases shall be terminable by either party only after due notice given at least 6 months in advance.

(*g*) After the first year payment shall be made for inconvenience or loss sustained by the other party by reason of termination of the lease without due cause.

(*h*) The landlord's lien shall be limited during emergencies such as a serious crop failure or sudden fall of prices where rental payments are not based upon a sliding scale.

(*i*) Renting a farm on which the dwelling does not meet certain minimum housing and sanitary standards shall be a misdemeanor, though such requirements should be extremely moderate and limited to things primarily connected with health and sanitation, such as sanitary outside toilets, screens, tight roofs, and other reasonable stipulations.

(*j*) Landlord and tenant differences shall be settled by local boards of arbitration, composed of reasonable representatives of both landlords and tenants, whose decisions shall be subject to court review

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[35] "Farm Tenancy," pp. 15-16. *Report of the President's Committee*, February, 1937.

when considerable sums of money or problems of legal interpretation are involved [36]

2. Taxation of farm land. The taxation of farm land, as a means of improving tenure conditions, is one of the most debatable subjects in agricultural economics. It centers on the fact that land is limited and cannot be increased—that is, land has no supply price in the sense that freely reproducible products have supply prices. For this reason it has been suggested that the several states enact laws designed to prevent the concentration of land in large units controlled by a relatively few persons. Such concentration could be prevented and large estates could be liquidated by the imposition of a differential tax. Under such a tax the small farms and family-operated farms would not be taxed at all or the tax would be light. On the other hand, large farms would be taxed at a high rate. Differential taxation, however, has not been used in the United States.

3. Safeguards of civil rights. The inability of tenants, croppers, and farm laborers to improve their economic and social status stems from their relatively weak bargaining power. *Nowhere* is weakness of these tenure classes more in evidence than in the area of civil rights. In a number of ways and to varying degrees, the fundamental civil rights, as found in the Constitution of the United States, have been denied to these classes. It must be admitted that civil rights are and always have been difficult to delineate. In all cases the description is based upon the "Bill of Rights," or the first Ten Amendments to the Constitution. The amendments of special significance to this discussion are Articles I, IV, V, VI, VII, VIII. These amendments are as follows:

Article I. Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech or of the press; or the right of the people peaceably to assemble and to petition the Government for a redress of grievances.

Article IV. The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

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[36] *Ibid.*, p. 18.

Article V. No persons shall be held to answer for a capital or other infamous crime unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the militia, when in actual service, in time of war or public danger; nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use without just compensation.

Article VI. In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the State and district wherein the crime shall have been committed, which districts shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the assistance of counsel for his defense.

Article VII. In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury shall be otherwise reexamined in any court of the United States than according to the rules of the common law.

Article VIII. Excessive bail shall not be required nor excessive fines imposed, nor cruel and unusual punishments inflicted.

Suggested remedies for the problems that have emerged as the result of nonenforcement of these rights or of their tacit denial may be classed in one of three categories, namely: (1) extension of formal and general education, (2) enactment of state and Federal laws designed to strengthen the enforcement of justice when such rights have been violated, and (3) enactment of state and Federal laws to prevent discriminatory practices in such matters as education, employment, and political office.

The "President's Committee on Civil Rights"[37] made specific recommendations in each of these categories. For the extension of education the Committee recommended "enactment by state legislation of fair educational practice laws for public and private educational institutions, prohibiting discrimination in the admission and treatment of students based on race, creed, or national origin." For an adequate enforcement of justice the Committee recommended changes in Department of Justice that would make this agency a more potent force in protecting

[37] "To Secure These Rights," prepared by Southern Regional Council, Atlanta, Georgia, November 12, 1947.

the "rights" of individuals. For example, the Committee suggested more funds for the Department "to enable it to engage in more extensive research and to act more effectively to prevent civil rights violations" and "the establishment of a permanent Commission on Civil Rights in the Executive office of the President."

In the third category, "Enactment of state and Federal laws to prevent discrimination practices," the Committee recommended "the enactment of a Federal Fair Employment Practices Act, prohibiting all forms of discriminations in private employment based on race, color, or national origin."

This statement of the Committee's report is not all inclusive, but it does indicate, in a specific way, the importance of civil rights in the problems of tenure and also the type of remedies that are necessary.

Questions

1. What is meant by the term "land tenure"?
2. What is the American "ideal farm"?
3. To what extent has the "ideal farm" been achieved? Give data.
4. What is meant by "tenure status"?
5. Name and describe briefly the various tenure classes
6. Name the states in which (*a*) farm ownership prevails, (*b*) tenancy is common.
7. State how the various tenure groups differ as to (*a*) size of farm operated, (*b*) education, (*c*) incomes and levels of living, and (*d*) health.
8. What are the essential elements in a program to improve tenure conditions?

References

Ely, R. T., and Wehrwein, G. S, *Land Economics.* New York: The Macmillan Company, 1941.

Gras, N. S. B., *A History of Agriculture in Europe and America,* Chapter V. New York: F. S. Crofts & Co., 1940.

Renne, Roland R., *Land Economics.* New York: Harper & Brothers, 1947.

Spiegel, Henry W., *Land Tenure Policies at Home and Abroad.* Chapel Hill: The University of North Carolina Press, 1941.

Taylor, Carl C., and others, *Rural Life in the United States,* Chapters 15 and 16. New York: Alfred A. Knopf, 1949.

PART III—MARKETING OF FARM PRODUCTS

The Farm Marketing Problem
Markets and Middlemen
Marketing Specific Farm Products
Cooperative Marketing and Purchasing
Cooperation in Action

CHAPTER 13

The Farm Marketing Problem

IN THE PAST a large part of our national energy has been devoted to the improvement of technical processes and to the increase in the amount of commodities produced. This idea is often expressed in the statement "Make two blades of grass grow where one grew before," or as a modern wit has said "Make two gallons of milk flow where one flew before." These efforts have been definitely successful, so much so that production processes and techniques are far ahead of improvements in the means of getting products into the hands of those who need them. In recent years, however, much thought has been directed to the farm marketing problem. It is this problem to which attention is now directed.

Meaning of Marketing

Like many other words, marketing has a variety of meanings and applications. When the farmer's wife visits the local grocery store with her list of needed articles, she says she is doing her marketing. When her husband takes a load of products to be sold, he says he is marketing them. The wholesale grocer, although he has no contact with the original producer nor the ultimate consumer, is obviously helping in marketing. The banker who lends funds to the grain or cotton dealer clearly has taken part in marketing. For the purpose of this discussion, marketing consists of a series of services performed in getting a commodity from the producer to the final utilization of the consumer. Marketing may be defined, therefore, as the performance of those services that are necessary to get commodities from the place of their production into the hands of the consumer in the form and quantities needed.

The story of what happens to farm products from the time they leave the farm until they reach the consumer has been told in many ways. Most common of all is the depicting of the

difference between the price at the farm and the price the consumer pays. This difference is often great. For example, the price paid for a pound of cotton at the farm is, on the average, about 7 per cent of the selling price of the finished product. This difference, which varies with the product, is often attributed to what is called the "parasitic middlemen." This disposal of the problem may be colorful and popular, but it is unfair and inadequate. To trace the causes of these price differences, it is necessary to describe the tasks that are performed in getting products from the farm to the consumer. These tasks are many and difficult, the performance of which involves the expenditure of vast quantities of labor and of millions of dollars invested in processing plants, railroads, and warehouses. Management, often of a high order, is required. It is the cost of these tasks that explains the differences in producer and consumer prices.

Marketing Margins[1]

There is firmly implanted in the public mind a belief that marketing costs too much. There is, and indeed there must be, a margin between what the producer receives for a product and what the consumer pays for it. Costs of processing, distributing, and selling must, beyond question, be provided for. But, since the public has so little knowledge of what these services include, there has grown up the feeling that much of the cost is unnecessary.

The marketing and processing margin is the difference between the price per unit that the consumer pays and the price received by the farmer. The size or magnitude of this margin varies with the nature of the product. For example, the average dressed yield for cattle is 53.2 per cent of the weight on foot; for hogs, 63.2 per cent; and for sheep, 47.3 per cent. Clearly the farmer must sell 1.88 pounds of liveweight for the packer to produce one pound of beef, but only 1.37 pounds for

[1] The U. S. Department of Agriculture has issued several useful studies on this subject. The following discussion will be based on the facts set forth in *Technical Bulletin 932*, "Marketing Margins and Costs for Livestock and Meat"; *Technical Bulletin 913*, "Marketing and Manufacturing Margins for Tobacco"; *Technical Bulletin 891*, "Marketing and Manufacturing Margins for Textiles"; and *Miscellaneous Publication 576*, "Price Spreads between Farmers and Consumers for Food Products."

hogs. More specifically, as the following tabulations show, the portion of the consumer's dollar (the retail value) that is spent for services in marketing and processing varies markedly.

FOR MEAT

	Per Cent
Value at retail	100 0
Margin for retailing	24.0
Margin for wholesaling	5 8
Margin for meat packing	14 9
Margin for livestock marketing	4.3
Received by producers of livestock	51.0

From these data marketing livestock accounts for 4.3 per cent of the consumer's dollar; marketing meat, 29.8 per cent; processing, 14.9 per cent, leaving slightly over one half for the producer of the livestock. When the retail dollar is allocated according to the agency instead of the function, the retailers took 23.8 per cent; wholesalers (nonpackers), 1.3 per cent; packers, 19.7 per cent; and livestock marketing agencies, 4.2 per cent of the consumer's dollar, leaving 51 per cent for the producer.

Tobacco is an interesting example because of the high proportion of the consumer's dollar that goes for state and Federal excise taxes. This portion ranged from 27.5 per cent in 1926 to 38 per cent in 1941. Details of cost allocation are:

FOR TOBACCO

	Per Cent
Value at retail	100 0
Retailers	18.4
Wholesalers	4.0
Federal and state excise taxes	36.0
Manufacturers	25.2
Dealers in leaf tobacco	1.2
Imported tobacco	3 6
Domestic growers	11.6

These data show that marketing takes 23.6 per cent; manufacturers, 25.2 per cent; and excise taxes, 36 per cent of the consumer's dollar, leaving 11.6 per cent for the domestic producer of the leaf. This portion is higher if the product alone is considered aside from the excise taxes. In this manner 64 cents of

ment must be installed at some point adjacent to production. Labor must also be employed and containers purchased. It would be too expensive to perform the service of grading unless a sufficient quantity of the product to be graded were available

c. When farm products must be processed, assembling must be done for the same reasons as were mentioned in the case of grading.

d. Assembling is often needed for filling specific orders. Thus when a shipper has an order from one of his customers for four

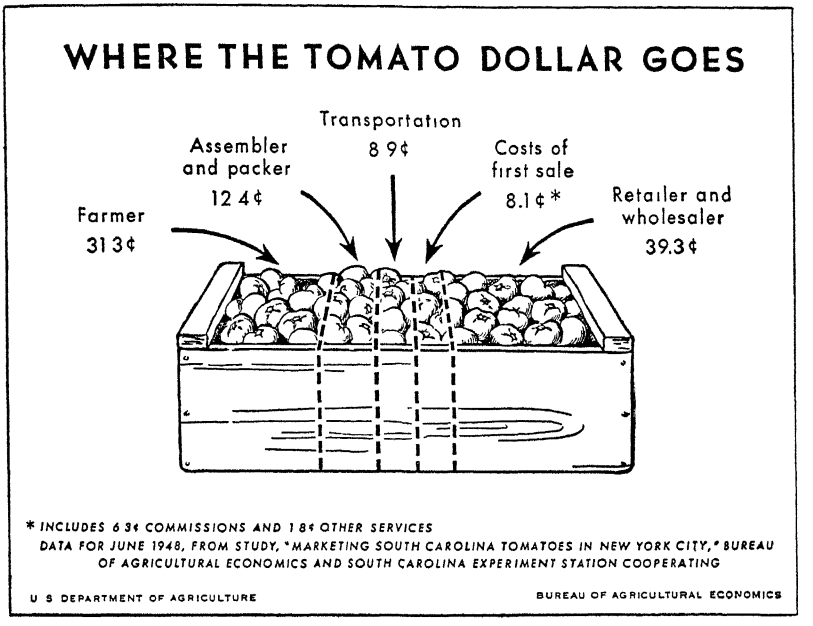

WHERE THE TOMATO DOLLAR GOES
Transportation
8 9¢
Assembler and packer
12 4¢
Costs of first sale
8.1¢*
Farmer
31 3¢
Retailer and wholesaler
39.3¢
* INCLUDES 6 3¢ COMMISSIONS AND 1 8¢ OTHER SERVICES
DATA FOR JUNE 1948, FROM STUDY, "MARKETING SOUTH CAROLINA TOMATOES IN NEW YORK CITY," BUREAU OF AGRICULTURAL ECONOMICS AND SOUTH CAROLINA EXPERIMENT STATION COOPERATING
U S DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

FIG 23

carloads of potatoes, to fill this order he must assemble the potatoes in carload lots.

e. Collecting products may be necessary not so much for amassing large quantities but for obtaining a variety of products. This is especially true for the jobber, wholesaler, and retailer.

2. Storing. Storing implies the keeping of goods or products over a period of time, usually in a warehouse, a cold storage plant, or other special facility, depending upon the nature of the product. This function is essential for the following reasons:

a. To maintain an adequate supply for processing. For example, a flour mill must have an adequate supply of wheat in order to produce flour as needed.

b. To take advantage of anticipated advance in prices. This is important when the production is highly seasonal and when price advances after the product has been harvested.

c. To preserve the products. Perishable fruits and vegetables are examples for which controlled storage is necessary.

d. To improve the quality of a product. This is called aging or ripening the product. Tobacco is a good example of a product's being improved in quality through storage.

e. To control the rate of flow into the market. When the rate of flow is under control, price fluctuations are reduced to the advantage of the producer and consumer.

3. Financing. It is not always possible and it is seldom advisable for a middleman to finance his operation out of his own funds. This means that he must resort to borrowing. But from whom shall he borrow? To perform this function, banking and credit institutions have been created, which are willing to extend funds, under prescribed conditions, to middlemen. For this service, the middlemen must pay. A middleman may borrow money or use credit for any one of the following reasons:

a. To purchase seasonal produce. When the western wheat crop is harvested, the grain comes to market in a flood of golden yellow kernels. The farmer sells his crop to the local elevator, which in turn sends it to the nearest market, where it is sold to the mills or to the terminal elevators. The elevator and the middlemen who handle it later must have a greatly increased supply of funds to make the successive advances that are necessary.

b. To maintain a constant supply. Cotton and wheat are kept in storage until needed for processing. This ties up enormous amounts of funds for varying periods. These funds are secured by borrowing, with the commodity in storage forming the security for the loan.

c. To make advances for seasonal expenses. The movement of a crop such as wheat requires advances to the railroad and other transporting companies for freight charges.

d. To secure needed equipment. It may be desirable to resort

to borrowing to secure needed equipment, such as potato graders; or to purchase seasonal supplies, such as apple boxes or bags for potatoes or citrus fruits.

4. Assuming risk. This term means, as applied to marketing, that some person or firm assumes the chance of loss that may be inherent in the performance of any marketing function. A complete list of the risks to which middlemen are subject would be a long one. These may be classified as those connected with the conditions of the product itself and those connected with changes in its market price.

a. Risks arise out of changes in the condition of a product. Farm products are perishable in varying degrees, running from highly perishable strawberries to relatively nonperishable cotton lint. But even cotton lint must be handled and protected properly to prevent deterioration in its color. Other products are subject to spoilage from decay, from becoming too dry or too moist, from freezing, and from other causes that can be reduced or prevented by suitable storage facilities.

b. Risks arise out of changes in prices. The market price for farm production is notably subject to change caused by fluctuation in the amounts offered on the markets, by variations in quality of the product offered, or by changes in the demand for the product. For example, watermelons, when they first appear on the New York market, sell for a high price; but, as the season advances, the price falls. Staples, such as wheat or cotton, being in world markets, change in price as world conditions change.

5. Standardizing and grading. The sorting of products as to kind, quality, and size is known as "grading." Standardization, which is supported by legal sanction, establishes the permanency of these grades; that is, it means that the given grade shall continue the same quality of article each day, week, month, or year. There are several reasons that make this a desirable, even a necessary, service. Nature seems to dislike exact duplicates, at the same time the consumer insists on essential similarity. This is especially true of fruits and vegetables; the product of a single field or orchard may display wide variation. On the other hand, since consumers prefer to buy products that are uniform as to size and quality, grading makes marketing

easier and more profitable. Some of the specific reasons for grading are:

a. Standardizing makes possible sale by description and reduces the need for inspection by the buyer. This method has been brought nearly to perfection in the grain trade, where millions of bushels are traded on the basis of grade alone. Sorting and grading of fruits and vegetables are being practiced more and more.

b. Grading reduces cost of transportation by eliminating unsalable sizes and qualities and by removing dirt and other foreign material. Culls must be discarded in any case; and, if this is done before the product is sent to market, freight costs on this waste material are not needlessly expended.

c. Grading has a favorable effect on prices. The buyer of a nondescript car of vegetables is compelled to adjust the price to cover the possibility of low-grade material, and he usually makes his offer low enough to cover any possible losses. The value of a smaller amount of high-grade product is often higher than that of the same product mixed with culls and dirt.

6. Selling. Selling is the act of exchanging goods and services. When a good is exchanged for some other good, the exchange is called "barter." When the goods or services are exchanged for money, the act is called a "cash transaction." Sometimes goods and services are bought and sold on credit. In such cases, the buyer agrees to pay the seller at some future time money, or its equivalent, equal to the value of the goods exchanged. Such exchanges are known as "credit transactions."

Selling occurs every time a good changes ownership and even in some cases when a transfer of ownership is not involved. The farmer sells to the shipper, who in turn sells to the processor, or wholesaler, who sells to the retailer, who sells to the consumer. Each exchange involves time, effort, and usually some sort of establishment, all of which cost money. Eggs furnish an excellent illustration of the number of exchanges required in getting a farm product from the producer to the consumer. First, a crate of eggs may move to a huckster, a processor, or an egg-buying station. From these buyers, it may move to a shipper, country processor, or commercial trucker. It then may be put in cold storage or sent to an egg wholesaler, or city processor,

then to the retailer, and finally to the consumer. It is not at all necessary that a crate or a dozen eggs take this particular route. Eggs may be, and often are, sold direct to the retailer or consumer.

Selling is one of the most difficult and expensive of the marketing functions. As a rule, the seller must take the initiative, or, as the trade often expresses it, "goods don't sell themselves." Efforts must be made to attract the buyer. These efforts consist of calls by telephone, telegrams, personal calls, advertisements, displays of goods. It will bear repeating that agricultural activity results in the production of surpluses and that one of the main objectives of marketing is the equalization of these surpluses among consumers. This equalization requires salesmanship of a high order.

7. Transporting. This function may be defined as the movement of goods from one place to another. It is the act of getting persons or goods from where they are not needed to places where they are needed. Wheat on the farms of the Northwest or in the grain elevators of St. Paul and Minneapolis is of no use to the consumer in New York City and will be useful only after it is made into flour and brought to his door.

In the moving of products from one place to another, human services and equipment are involved. A product that starts its journey from the farm may be transported to a local shipping station in a truck, automobile, or wagon. From the local shipping station, it may be loaded into a freight car or into a cross-country truck for transportation to some distant city or to a port. Modern transportation methods permit the shipment of goods over long distances. Lettuce from a farm in California or in Florida may be shipped in a car, a truck, or an aeroplane to Chicago or New York. These different types of carriers, as in the case of the aeroplane, may take advantage of the cold air of the upper regions of the atmosphere or they may be equipped with refrigeration. Then, too, loading and unloading facilities have been greatly improved in recent years. In many cases among the staple commodities, the goods shipped are seldom, if ever, touched by human hands. The wheat in the farmer's wagon or truck is sucked up mechanically into elevators, from which it is fed into freight cars or barges. At the terminal market, it is again moved by mechanical devices.

Modern transportation permits diversion in transit, which has greatly reduced costs and aided in speeding deliveries. For example, a car of citrus fruit from Florida or of potatoes from Maine or Minnesota can be started rolling toward the market, billed to some diversion point but with no indication of its final destination or of its ultimate buyer. While the shipment is in transit, the shipper gets in touch with some middleman of the market who will find a buyer for the car. Final directions will be awaiting the car at the diversion point, and it will be forwarded without delay to its destination. By this means a constant stream of produce can be moved, without waiting for definite orders; and the buyer is enabled to have his orders filled more promptly by means of diverting some car already in transit.

8. Processing. Processing may be defined as the act or a series of acts by which a product is converted into a more usable form. Farm products vary widely with respect to the degree of processing that is necessary for preparing them for human consumption. Most fruits can be consumed in their natural form, whereas some products, such as wheat, must be changed into flour, which, in turn, must be processed into bread or other forms before it can be used for human consumption. The advantages of processing are, to a large extent, obvious. The more important of these are:

a. It makes products more usable.

b. It is a means of converting products from a highly perishable to a nonperishable form, or into a form that is highly nonperishable (for example, fruits into fruit juices).

c. It is a means by which the quality of the product may be improved.

d. Processing is often necessary for removing dangerous bacteria from the product or for preventing the contamination of products.

e. Processing is often used as a means of adding to the vitamin and mineral content of products.

f. Processing provides ways and means of utilizing waste or by-products.

g. Through processing many products can be made out of a common raw product (for example, milk may be converted into butter and cheese).

9. Packaging. Packaging is the process of putting commodities into convenient containers or wrappers. Formerly, little or no attention was given to packaging, but in recent years it has become an important marketing function. Today consumers, shippers, and merchants are demanding that products be packaged. The more important advantages of this service are:

a. Bulky products, such as hay, wool, and cotton, which can be subjected to great pressure, can be handled more easily if they are put into bales.

b. Products for which the individual units are small, such as fruit and potatoes, are more easily handled if put into packages.

c. Packaging protects products from physical damage in handling.

d. Usually more products can be stored in a given space when packaged, thus reducing the cost of storage and transportation.

e. Containers usually provide some protection against pests, such as rodents and flies.

f. Containers may be used to prevent loss of weight and food value.

g. Packaging provides the necessary protection for fragile commodities, such as eggs.

10. Retailing. At the end of the journey of a product from the producer to the consumer is the retailer. Retailing or the merchandizing is essential for the following reasons:

a. To provide consumer with a variety of products.

b. To provide storage for products that must be available for immediate delivery.

c. To provide a market place that is convenient to the consumer.

d. In many cases the retailer must sort and package the products for the consumer.

e. Often the retailer finances consumers or must sell goods on credit.

f. The retailer often acts as an adviser to consumers as to what to buy and when.

Factors Affecting the Marketing of Farm Products

To complete this discussion, it is necessary to point out some factors that affect the marketing of farm products, namely: the size of the economic unit or the size of the farm, the nature of the products, variations in quality and supply, and optional uses.

1. Size of the farm. One of the factors that affects materially the marketing of farm products is size of the productive unit. There are over six million farms in the United States, and about 2/3 of these produce for the market. This means that the volume of products available for sale from any specific farm is small. For this reason, the expense per unit of product involved in preparing products for market and the actual selling of the product is much larger than it would be if the volume of output per farm were large. As a result, farmers tend to market their products in the form in which they are produced, without regard to consumer demand or preference. When asked why they market their products in this fashion, the farmers reply, "It does not pay to grade or prepare our products for market."

2. The nature of the products. Much the greater portion of the products of farms must be classed as raw materials. Wheat is a raw material for the manufacture of flour, and cotton lint, for the manufacture of textile products. A smaller portion of farm products are suitable to be used in their original form. Fresh fruits and vegetables find their way to the consumer in much the same condition as when they leave the farm. But, in most cases, the products of the farm must be processed before they can be used by the final consumer. Wheat, cotton, and tobacco are outstanding examples of products that cannot be used in their original or natural form. They must be processed. Even milk, which can be consumed in its natural form, must be processed to some extent before consumption is permitted. For one thing, the bacterial content of milk must be controlled. This means that most milk must be pasteurized before it can be consumed. Then too, milk must be processed for the production of cheese, butter, and condensed or evaporated milk. As a rule, this processing cannot be done efficiently on the farm. On the contrary, milk must be shipped to processing plants

that may be, and often are, far removed from the place of production.

3. Variations in supply and quality. Variations in supply and quality affect the marketing of farm products. These variations are of three types: seasonal, annual, and cyclical.

a. Seasonal. The effect of seasonal production on marketing is well stated by Clark and Weld.

> Most farm crops mature during a relatively short period of the year, and because of this, there usually occurs a "peak load" in their sale, storage, transportation, and financing. When not too perishable, they may be held for months in their natural state and so be consumed with more or less uniformity throughout the year. But the farmer often desires to sell at once, sometimes even before the harvest. Few consumers, however, and few manufacturing establishments wish, or are able, to store and finance products for their own future use. There is, consequently, need for storage and financing facilities and for facilities for rapid marketing. The fact that shipments from growing areas are largest during and immediately following the harvest complicates their sale and transportation, their accumulation in central markets complicates their storage, and the financing of the seasonal crop movements is an annually recurring problem of national scope.[3]

b. Annual. In addition to seasonal variation of production, there are often marked annual changes in supply and quality. This fact is illustrated by the data in Table 17, which show the annual changes in the production of several farm products. These annual changes in output

> . . . tend to disorganize market prices and to complicate both storage and transportation. In some years, these facilities are taxed beyond their capacity, and at other times, they may prove far greater than the need. The variation in quality complicates the problem of grading, and makes purchase and sale more difficult. These variations of quality and quantity cause some of the major difficulties in the way of a stabilized agricultural price and income. They also handicap the development of direct relations between the grower and large buyers.[4]

c. Cyclical. In the case of some farm products there is a definite cyclical movement. This is especially noticeable in the production of hogs. (See Figure 24). The chief cause of this movement is the relationship between the price of corn,

[3] From Fred E Clark and L. D H. Weld, *Marketing Agricultural Products*, pp. 2, 3. By permission of The Macmillan Company, publishers.

[4] *Ibid.*, p. 5.

the chief farm product used in hog production, and the price of hogs. When the corn-hog price ratio[5] is favorable to hog production, the corn will be fed to hogs rather than sold as corn. This leads to an increase in the supply of hogs. On the other hand, if the hogs are cheap relative to the price of corn, farmers will tend to sell the corn as grain rather than feed

TABLE 17

VARIATIONS IN THE VOLUME OF PRODUCTION OF POTATOES, WHEAT, AND COTTON UNITED STATES 1929-1943*

Year	*Percentage Change in Production over Previous Year*		
	Potatoes	*Wheat*	*Cotton*
1929		. .	. . .
1930	3.1	7 6	−6 0
1931	11.8	6.2	22 7
1932	−2.5	−19.7	−23.9
1933	−8 4	−27 0	0 3
1934	18 4	−4.7	−26 1
1935	6.8	19.4	10.4
1936	−14 5	0 3	16.6
1937	16 2	38 7	52.8
1938	−5.5	5.3	−37.0
1939	−3 8	−19 4	−1.1
1940	9.7	9 7	6 3
1941	−5.4	16.0	−14.5
1942	4 2	3.3	19.3
1943	25.4	−14 2	−10.8

* Source: U S D A *Agricultural Statistics*, 1944

it to hogs. This leads to a decrease in the supply of hogs. Thus it happens that the supply of hogs for several seasons may be much larger than the market can absorb at prices that are considered "adequate or fair" to the farmer, whereas in other years, there will be a relative scarcity of hogs. This uneven flow of hogs on the market complicates the marketing problem in much the same way as seasonal and annual changes in supply.

4. Optional uses. The case of corn and hogs illustrates an-

[5] The corn-hog ratio is expressed as the number of bushels of corn that will equal in value one hundred pounds of hogs. It is said to be favorable when the ratio is high (which means that the price of corn is low), and unfavorable when the ratio is low, indicating a high price for corn.

other factor that affects the marketing of farm products, namely, optional uses. This term means that the farmer often has a choice between two or more ways of disposing of his crops. In the case of corn, he may feed it to hogs or to other classes of livestock or he may sell it. The same situation exists in the case of hay, which may be fed on the farm or sold in its natural form. In the case of some fruits and vegetables, optional uses exist. For example, some vegetables may be sold as fresh vegetables or they may be processed.

Not only will optional uses affect the prices received from farm products, but they will affect the flow of these products

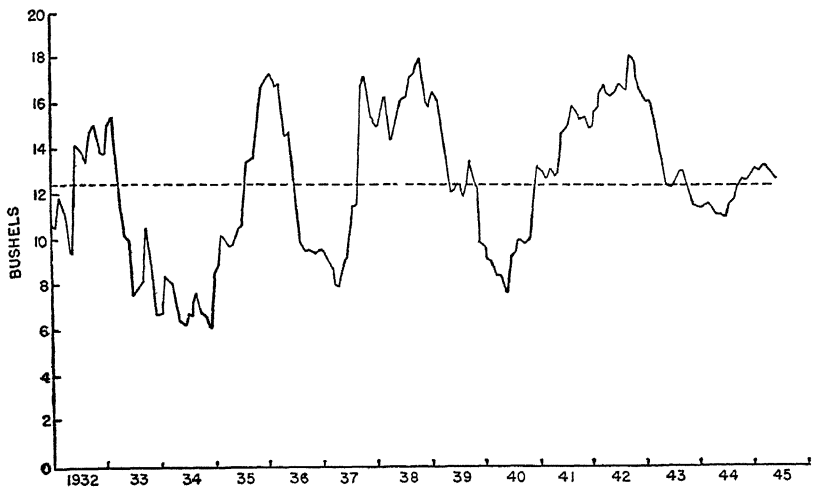


FIG 24. CORN-HOG RATIOS

to market. It may happen, as in the case of hogs, that the result is a large or a small surplus appearing on the market. But optional uses also may be a means of preventing market gluts. If, for example, the market in any given year, or even in any given month, appears unfavorable for the product in its natural form, the product may be processed, stored, and sold at a later time when the market is more favorable, or it may be sold in a different market. Farmers under some conditions may take advantage of optional uses simply by extending the feeding period. If, for example, the price of hogs in any month is weak or unsatisfactory, the farmer may extend the feeding period and market his livestock at a later date.

In any event, whatever means the farmer employs to take advantage of this optional use of farm products, it complicates the marketing problem. It raises many questions as to how and when products should be processed. Whether or not farmers should be provided with processing plants in order to be able to process or not process depends upon the condition of the market. This is by no means an easy question to answer since it involves such things as the cost of maintaining processing plants in seasons when not used, or when not used to capacity. After all, machinery costs money, and it is a cost whether or not it is used. Then, too, it is often difficult to obtain labor on a short seasonal basis. Labor wants full, not part-time, employment. A competent manager cannot be obtained just for a short time. These and a host of other problems arise when farmers attempt to devise ways and means of exploiting optional uses for their product.

Questions

1 Define marketing
2. What is a market?
3. Why does marketing consist of productive processes?
4. What is meant by marketing margins? Can these margins be justified?
5. Name and indicate what is meant by marketing functions.
6. Select any one of the marketing functions and explain why it is necessary.
7. What are the chief characteristics of farm products that affect their marketing?

References

Clark, Fred E., and Weld, L. D. H , *Marketing Agricultural Products*, Chapters I, II. New York: The Macmillan Company, 1938.

Converse, Paul D., and Huegy, Harvey W., *Elements of Marketing*, Chapters 1, 4, 5, and 6. New York: Prentice-Hall, Inc., 1947.

Shepherd, Geoffrey S , *Marketing of Farm Products*, Chapters 7, 15 and Appendix A. Ames: Iowa State College Press, 1946.

CHAPTER 14

Markets and Middlemen

PRODUCTS on their journey from the farm to the final consumer pass through many types of markets and are handled by many kinds of middlemen. It will not be possible to visit all of these markets nor to meet all of the middlemen found in them. Enough will be said, however, to give a clear notion of the nature of the services rendered by those persons or agencies through which the products pass on their way to their ultimate destination. For the purpose of this discussion, local, wholesale, and retail markets will be defined and described.

Types of Markets

1. Local markets. These markets, as the name implies, are found near the place where the products are grown. They are, as a rule, the markets in which the products are first sold. It is to these markets that the farmers bring their products and bargain with the local or resident buyers, as they are often called.

The types of local markets may vary, but in operation they have much in common. The major functions performed can be stated as follows: to assemble products in such quantities as to facilitate handling; to offer the farmer a market with little delay and trouble in selling; to give the farmer opportunity to bargain individually in the sale of his product; to give the farmer some idea of the quality of the commodity he is producing.[1]

2. Central wholesale markets. These markets are quite unlike the local markets. They are usually larger and have a different tempo. There is more hurry and commotion than is found in the slow, leisurely local market. They are usually well equipped to handle a large volume of incoming and outgoing traffic.

[1] Glenn R. Smith, "Cotton Marketing Practices in North Carolina," North Carolina Agricultural Experiment Station, *Technical Bulletin 51*, 1935.

Central wholesale markets are usually found in cities that are strategically located or so located that they afford easy entrance and exit to farm products. The choice of the city does not depend on its size, although it is true that most central markets, or primary markets, are to be found in the larger cities. The determining point is the type of city—its characteristics. The city must have the aspects of what Gras calls a metropolis.[2] Foremost among these characteristics is the presence of a "hinterland, or a tributary adjacent territory," of which the city must be the economic capital. Chicago, for example, is a great central wholesale market because its hinterland takes in the grain-growing states, the livestock-producing areas, in short, the great producing region of the upper Middle West. Lesser cities of the same type are the Twin cities of Minneapolis and St. Paul, of New Orleans and Memphis. Pittsburgh and Detroit, although great cities, are manufacturing centers, having no tributary territory, and are cities with no general wholesale markets.

To be a great central market, a city must have abundant facilities for shipping, either land or water or both. Easy transportation to and from the city must be available. The city must have capacity for storing great quantities of products. For example, Minneapolis is equipped with terminal elevators with storage capacity for enormous amounts of wheat and other grain. Chicago's stockyards are world famous.

Two other characteristics are typical of great central market cities. A city must have a large consuming capacity of its own. Chicago, for example, is a great distributing center for products from the East, West, and South. But not all the produce is to be reshipped, for Chicago consumes a large portion of it. Furthermore, the central market must be in a position to buy all produce that is offered for sale. Grain may be sold at any time in Minneapolis or Chicago; livestock shipped to Chicago will always find a buyer; cotton is constantly bought and sold at Memphis or Houston.

3. Distributive markets. These markets are sometimes referred to as jobbers' markets because so much of their business

[2] N. S. D. Gras, *Introduction to Economic History*, p. 184. Cambridge, Mass.: Harvard University Press, 1915.

consists of breaking car-lots up into smaller amounts for sale to retailers. Such markets are true wholesale markets. In contrast with the tributary territory characteristic of the central primary markets, the jobbers' market may be said to have a "trade area," an area surrounding the city and of a size that will make distribution of goods economical and profitable. In general, the denser the population, the smaller the size of the trade area; the less dense, the larger the trade area. Examples of jobbers' distributive markets are Boston, Minneapolis, Atlanta, and Richmond. Jobbers' markets perform an important assembling function in bringing together a variety of products to meet the needs of retailers whose customers demand a wide choice.

A description of the distributive market at Kansas City is inserted here as an example of the typical wholesale distributive market.

Kansas City, Missouri, with a population of 400,000 persons within its corporate limits in 1940 and a surrounding urban area of approximately 300,000 persons comprises one of the largest middle western fruit and vegetable markets. In addition the city fruit and vegetable market serves persons living in a trade area extending west to Salina, Kansas; south to Tulsa, Oklahoma, and Fort Smith, Arkansas; east, throughout the northwestern half of Missouri; and north into the extreme southern part of Nebraska. It is estimated that a million people living in or near Kansas City now receive their daily supply of fruits and vegetables from that city.

The city market of Kansas City is a combined retail, farmers', and wholesale market. The location of these types of agencies is convenient for their respective functions. The produce houses are situated in a quadrangle that opens to the south to face an arcade building, containing retail units. Completely surrounded by wholesale produce houses, 126 farmers' stalls are accommodated in three canopied islands, approximately in the center of the market area. Other farmers' stalls, totalling 91, are located near the retail and wholesale units.

Kansas City is served by 13 railway trunk lines, of which 10 have freight terminals, and is one of the largest distribution points in the United States. However, until recently the railroad companies had done little to improve the unloading facilities for fruits and vegetables at Kansas City. In 1941 four of the railway companies completed a terminal railroad yard located on 27 acres of ground between Front Street and the Missouri River, and extending from Grand Avenue to Harrison Street. This improvement has provided ample facilities only

4 blocks from the wholesale market area for receiving, inspecting, unloading, and diverting fresh fruits and vegetables.[3]

Types of Middlemen

A list of the more important services rendered in the typical primary market has already been given. Some of these services are directly related to marketing, whereas others are related indirectly. Some have such a definite, restricted task to perform (for example, samplers, graders, or shippers) that the very name of the service describes it, and no further description is necessary. Others perform more complex services, often involving several of the marketing functions. The services of these agents merit description.

1. Commission man. This type of middleman is defined as a marketing agent who receives consignments of products and who sells them on a fee or commission basis. He is an agent acting for a principal; he does not take title to the goods. His work consists in storing, insuring, handling, and selling the products consigned to him by the producer. He is a true agent since he is empowered to sell the goods and to collect the money for them. After receiving the money, he prepares an "Account Sales," a statement showing the amount received for the product, the costs incurred in handling and insuring the product, and the commission that he demands for his services. The balance or remainder he remits in the form of a check or bank draft.

Selling on commission is widely used in livestock marketing, in grains, and in cotton, commodities that typically enter central wholesale markets. This method is successful here for several reasons. For one, the commission men are organized, regulated, and frequently bonded, which reduces the possibility of questionable dealings. Another reason is that market information is more widely circulated and is more reliable from these markets, and the shipper can more easily check on the actions of his agent.

The method is also widely used with perishables, which must usually be sold on the basis of inspection. Speed is also a factor here, and the commission man's knowledge of current market

[3] "Marketing Arkansas Fresh Fruits and Vegetables at the Kansas City Wholesale Market," Arkansas Agricultural Experiment Station, *Bulletin No. 440*, 1943.

conditions enables him to get quick results when they are needed.

2. Shipper. A shipper may be defined as a middleman who buys in one market and sells in another. In the act of buying and selling he performs a number of services, such as assembling the products of individual farmers so that they may be shipped in carload lots. It is often necessary for him to supply storing, washing, grading, and packing facilities. He has to maintain business relations not only with producers but with other middlemen, such as commission men, wholesale brokers, and jobbers. To be successful and to perform his service in a satisfactory manner, he must possess an exact knowledge of the source of supplies, the quality of the products available, the prices for which they may be obtained, and the markets where a given lot of products can be disposed of to the best advantage.

3. Wholesaler. The term "wholesaler" describes a rather broad group of marketing middlemen. The use of the term "wholesale receiver" is becoming more prevalent since it describes those wholesalers who secure actual ownership of the goods that come to the wholesale market. Commission men and brokers are not wholesale receivers, since they never own the goods they sell.

> The wholesale receiver usually buys products in the country, while they are en route to market or after their arrival at the central market. His purchases are made in the local growers' markets from local middlemen and sometimes directly from growers through commission men. He may also buy from other wholesale receivers in the central markets Wholesale receivers who handle raw materials sell mainly to mills and factories and to wholesale middlemen in other markets. Those who handle products ready for final consumption sell to jobbers, to the buying departments of chain stores, to other retailers in their own market city, and to wholesale receivers and jobbers in other cities. . . . The large international cotton merchants buy in many domestic markets and ship American cotton to all parts of the world.[4]

4. Broker. The services of the broker are much simpler than those of the commission man. His work is that of bringing buyer and seller together. He is not a true agent since he does not take control of the products in any way. The shipper

[4] From Fred E. Clark and Carrie Patton Clark, *Principles of Marketing*, p. 102. By permission of The Macmillan Company, publishers.

may call on his broker to find a buyer for his car of grain. The broker at once begins telephoning or telegraphing possible buyers who might be interested. When he has found a buyer, he confirms the proposed sale by securing the shipper's approval. It is then the duty of the shipper to deliver and collect for the car from the buyers and to remit to the broker the amount of the fee for his services.

Buyers also use brokers. A textile mill may require a certain type of cotton for its own special purpose and call on its broker to secure it. After the broker has located the cotton, he may send a sample to his client for approval, or the client may accept the description. In either case the buyer and seller must conclude the deal. It is possible that both parties may have employed the same broker, in which event they must both pay him a fee.

5. Jobber. The jobber is a middleman whose sole activity is to sell to retailers. He buys in wholesale amounts and breaks his purchases down into smaller units according to the needs of his customers. The jobber is to be found only in a distributive wholesale market, never in a central primary market. He is found not only in produce markets but also in the field of groceries, which are the finished products of agriculture. Jobbers are merchants since they buy their goods outright and resell them; in this they are different from the commission men and the broker.

6. Retailer. The last of the hierarchy of middlemen is the retailer who sells directly to consumers. He owns the goods he sells. Retailers establish their business near to or in the center of the consumer groups. Although some may operate a large over-all business, the local retail units are usually small, the size varying directly with the concentration of consumers. Retailers usually buy from either wholesalers or jobbers. This is especially true of those who operate a small business.

Questions

1. Name the types of markets used in the marketing of farm products and give the distinctive characteristics of each.
2. Define a middleman.
3. Name the types of middlemen and indicate the function of each.
4. Which types of middlemen own the goods they market?
5. How do each of the types of middlemen get paid for their services?

References

Clark, Fred E , and Weld, L. D H., *Marketing Agricultural Products*, Chapters VI, VII. New York: The Macmillan Company, 1938.

Converse, Paul D., and Huegy, Harvey W., *Elements of Marketing*, Chapters 11, 12. New York: Prentice-Hall, Inc., 1947.

Shepherd, Geoffrey S , *Marketing of Farm Products*, Part III. Ames: The Iowa State College Press, 1946.

CHAPTER 15

Marketing Specific Farm Products

THE PRECEDING CHAPTERS have described the marketing problem, the functions performed in marketing, and some of the middlemen who perform these functions. We shall now expand these general statements into a description of the marketing of a selected group of specific commodities. It is true that with most farm products nearly all the marketing functions must be performed in the course of the journey from producer to consumer. Nevertheless, the scheme of marketing, although it is essentially the same, differs somewhat among commodities.

The Marketing of Livestock[1]

The word livestock includes, as a rule, hogs, beef cattle and calves, sheep and lambs. There are other types, such as horses and mules, but these are relatively of minor importance. It will not be necessary to describe how each of these major types or classes of livestock is marketed since about the same system is followed for all. The relative importance of the several classes is shown in Figure 25 and Table 18.

In tracing the movement of livestock to market, certain technical terms are used, such as slaughter animals, feeders, and stockers. These terms are derived from the degree of the animal's readiness for processing. Thus, in the case of beef cattle, the older heavier animals that are in condition for processing are called "slaughter" animals. Those that are not entirely ready but that can be made so fairly quickly are called "feeders." And those that are likely to need a longer period of preparation are referred to as "stockers."

For the most part, beef cattle are produced in the Plains region of the West, and, when nearing maturity, are shipped to a feed-producing region for finishing. The Corn Belt is a favorite

[1] This discussion is based upon "Marketing Livestock in the Corn Belt Region," South Dakota Agricultural Experiment Station, *Bulletin No. 365*, November, 1942.

TABLE 18

NUMBER OF LIVESTOCK SOLD FROM FARMS, BY SPECIES*

State	*Cattle (thousands)*	*Calves (thousands)*	*Hogs (thousands)*	*Sheep and Lambs (thousands)*
North Dakota	267	103	549	534
South Dakota	454	57	1,636	800
Nebraska	1,034	140	2,768	1,066
Kansas	957	145	1,656	697
Oklahoma	786	211	879	248
Minnesota	876	611	5,452	982
Iowa	2,083	284	13,429	1,664
Missouri	885	400	4,385	1,182
Wisconsin	453	1,117	2,393	353
Michigan	250	269	997	762
Illinois	1,293	353	7,301	835
Indiana	518	278	5,526	658
Ohio	404	353	4,159	1,163
Kentucky	318	215	1,070	785
Region	10,578	4,536	52,200	11,729
United States	16,743	8,742	60,167	29,207

* Source United States Department of Agriculture, Bureau of Agricultural Economics, "Meat Animals—Farm Production and Income by States, 1935-41," April 30, 1942

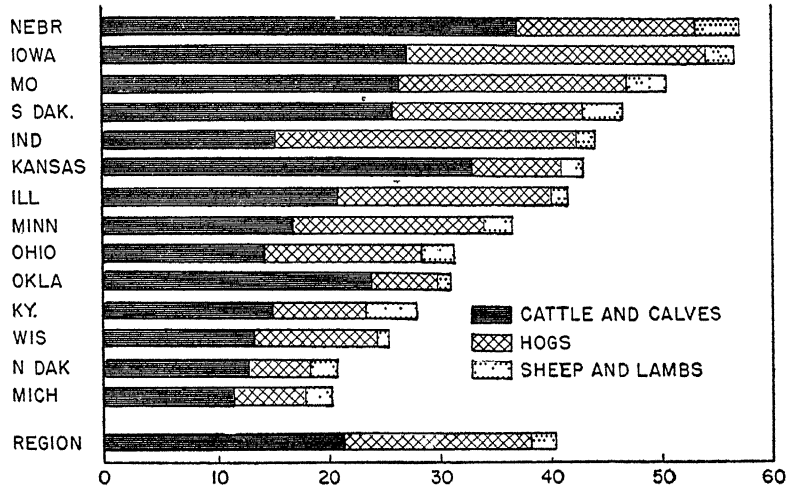


FIG. 25. PERCENTAGE OF TOTAL CASH FARM INCOME DERIVED FROM MEAT ANIMALS, BY TYPES AND BY STATES, 1940. (Source: South Dakota Agricultural Experiment Station, *Bulletin 365*)

section for feeding since the feed is abundant, and the cattle need not be shipped long distances to market after finishing. On the other hand, hogs are usually bred and reared on the same farms that produce their feed and are taken directly to market by the producer.

Types of Markets or Agencies

The producers of livestock have access to a number and variety of marketing agencies that they can use in both buying and selling farm animals. These agencies may be classed as (1) local markets, (2) terminal public markets, (3) packing plants, and (4) direct markets.

1. Local markets. Under local markets may be found local cooperative associations, country dealers, local auctions, concentration yards, and retail meat dealers. Each will be considered briefly.

a. Local cooperative associations are farmer owned and operated businesses that assemble and market livestock. At the outset (about 20 years ago), these associations confined their efforts to assembling and shipping livestock to some commission merchant. "In most states," says one report, "they still operate as shipping associations." But in more recent years, some associations have undertaken to merchandise their livestock "by marketing either direct to packers, or to other markets wherever the price is most advantageous."[2]

b. Country dealers are independent operators who are engaged in buying and selling livestock. Occasionally, the names "traders," "scalpers," or "pin-hookers" are applied to this type of middleman.

Country dealers may operate in several ways. The most common method when handling slaughter livestock is for the dealers to buy from farmers and feeders and sell at terminal public markets, direct to packers, at concentration yards of local markets, or at auctions. To a limited extent they also buy from other dealers at livestock auctions or at other markets. Dealers who handle stocker and feeder animals may buy from producers, at auctions, at terminal public markets, or at other markets and resell to farmers and feeders. Some dealers are salaried employees of packing concerns, and others are operators on their own account, selling exclusively to certain packers.[3]

[2] *Ibid.*, p. 9.
[3] *Ibid.*, p. 11.

c. Auctions are market places that are equipped to buy and sell livestock. They may be privately, or on occasion, cooperatively owned and operated. Auctions perform the same services as country dealers, except that the livestock is bought and sold by public bidding.

d. Concentration yards are market places where livestock is assembled in large lots for sale, reshipment, or sorting. Sales or purchases are made, not by auction, but by private agreement. Yards are usually privately owned and operated.

e. Retail meat dealers are usually merchants who purchase dressed meats from packing houses or similar sources. Formerly, the meat dealer did his own slaughtering and was called a "butcher," but the modern dealer depends on the packer for his supplies. There are a few who still provide a part or all of the meat needed by their customers by buying the livestock and slaughtering it themselves.

2. Terminal public markets. These markets are much more pretentious than any other livestock markets thus far described. They may be defined as "trading centers where facilities are provided for receiving and caring for and the handling of livestock." They are available to anyone who wishes to use them.

At a terminal public market, the stockyard company owns and maintains the physical facilities, such as yards, alleys, scales, and office buildings. In addition, if the livestock is fed and watered, the stockyard company provides the hay, feed, water, and bedding. It usually assumes the responsibility for yarding and feeding the livestock. The consignor pays the stockyard company for the use of the pens, including certain services, and for the hay, feed, and bedding used if they are provided. The stockyard company does not engage in either buying or selling livestock.

The livestock received at the market is consigned to commission men . . . who do the selling. Order-buying agencies and traders at the market purchase stockers and feeders for farmers and feeders. Order-buying agencies also buy slaughter livestock for outside packers and for some of the smaller local packers who do not maintain their own buyers at the market. Most of the commission men, or commission companies, located at terminal public markets are private enterprises. Some of the larger ones operate at more than one market. Farmer-owned cooperative commission agencies are located at most of the important terminal public markets; and a few, at smaller markets. Many of them handle large volumes of livestock. Traders who buy livestock on their own account for resale also are found at these markets. Farmers and others who furnish livestock or who buy livestock at the market

are not barred from acting as their own sellers or buyers, but they do not generally exercise these functions.[4]

3. Packing plants. These are establishments equipped to process livestock. Although, as will be shown later, some livestock is moved directly from the farm to packing plants, dependence is placed largely on the stockyards or on terminal public markets, or on both, for the needed supply. The source of supply will, however, vary with the plant and its location.

For some packing plants, all of the livestock is bought at terminal public markets; for some, all is bought direct; and for others, purchases are made both at terminal public markets and direct. The method of buying is not altogether dependent on the location of the plant receiving the livestock. However, it is more common for packers whose plants are located adjacent to terminal public markets to buy at these markets, although for some of these plants all or a substantial part of the livestock is being bought direct. Some packers buy or kill only one species of stock, such as veal calves or hogs, whereas the majority slaughter all species [5]

4. Direct marketing. Direct marketing occurs when a farmer sells his livestock directly to a packer without sending it through a central market. This type of marketing has been used to a greater extent with hogs than with cattle or sheep. There are two main reasons why this is true. A farmer is better able to judge and grade his hogs than his cattle; and, for that reason, he feels that he is more likely to receive a fair price. The number of buyers is admittedly smaller, but the chance for undergrading is less. On the other hand, he feels that he will do better with his cattle on a market where there is more competition.

Furthermore, a number of interior packing plants specializing in pork products have developed in the Corn Belt, notably in Iowa and in southern Minnesota. It is easy and economical to deliver hogs to such plants; the increase in hard surface highways over which hogs can be trucked has contributed to this result.

Marketing in this fashion saves the farmer the expense of central market handling and commissions; and, for this reason, the method has aroused the opposition of the organized central markets. It must be admitted as obvious that duplication of

[4] *Ibid.*, pp. 12-13.
[5] *Ibid.*, p. 14.

facilities must increase their cost; also that reducing the volume of business handled by central markets will cause the cost of handling each animal to be higher. The tendency would therefore be to reduce the cost of marketing hogs and increase that of handling cattle. In short, to some extent the business is undergoing a readjustment.

The question may now be raised as to what part of the total volume of livestock is shipped directly to the packing plants and what part takes a more roundabout route. This question is answered by the data presented in Table 19.

TABLE 19

PERCENTAGE OF ALL LIVESTOCK SOLD BY FARMERS AT VARIOUS TYPES OF MARKETS SHIPPED BY FARMERS*

Class of Livestock	*Terminal Public Markets*	*Packing Plants*	*Dealer or Truck Buyer*	*Auction or Sale Barns*	*Concentration Yards or Local Markets*	*Local Cooperative Association*	*Farmers and Others*
Cattle and calves	44 2	10.9	14 2	9 5	5 3	3.9	12.0
Hogs	35.5	20.3	13 1	6 5	14 5	5.3	4.8
Sheep and lambs	45 1	14 6	8.7	9.9	8.3	4.5	8 9
Average	41 6	15 2	12 0	8 6	9.4	4.6	8 6

* Source Compiled from Table 15, "Marketing Livestock in the Corn Belt Region," South Dakota Agricultural Experiment Station, *Bulletin No 365*, November, 1942.

About one-fourth of the livestock moves from farmers to packing plants, other farmers, or other users without passing through any intermediary market. More than 40 per cent of the cattle and calves and sheep and lambs and a somewhat smaller proportion of the hogs passed through terminal public markets but through no other markets. About one-fourth of the cattle and sheep and nearly one-third of the hogs moved through one or more local markets. Five per cent of the sheep and lambs, 7 per cent of the hogs, and 9 per cent of the cattle and calves moved through both local markets and terminal public markets. Data are not available on the volume of livestock passing through more than one market of the same type.[6]

Figures 26 and 27 show the channels through which livestock moves on its way to the packer and the movement of meat from the packer to the consumer.

[6] *Ibid*, p 28.

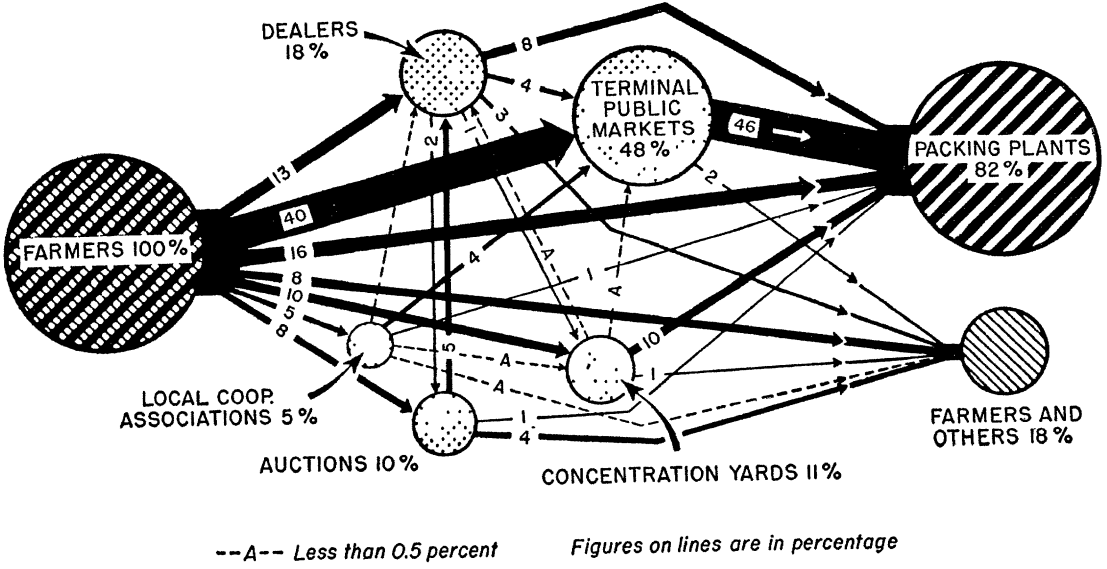


FIG. 26. CHANNELS OF LIVESTOCK MOVEMENT FROM FARMS IN THE CORN BELT REGION TO PACKING PLANTS, OTHER FARMERS, AND OTHER USERS, 1940. (Source: Corn Belt Livestock Marketing Research Committee, U. S. Department of Agriculture.)

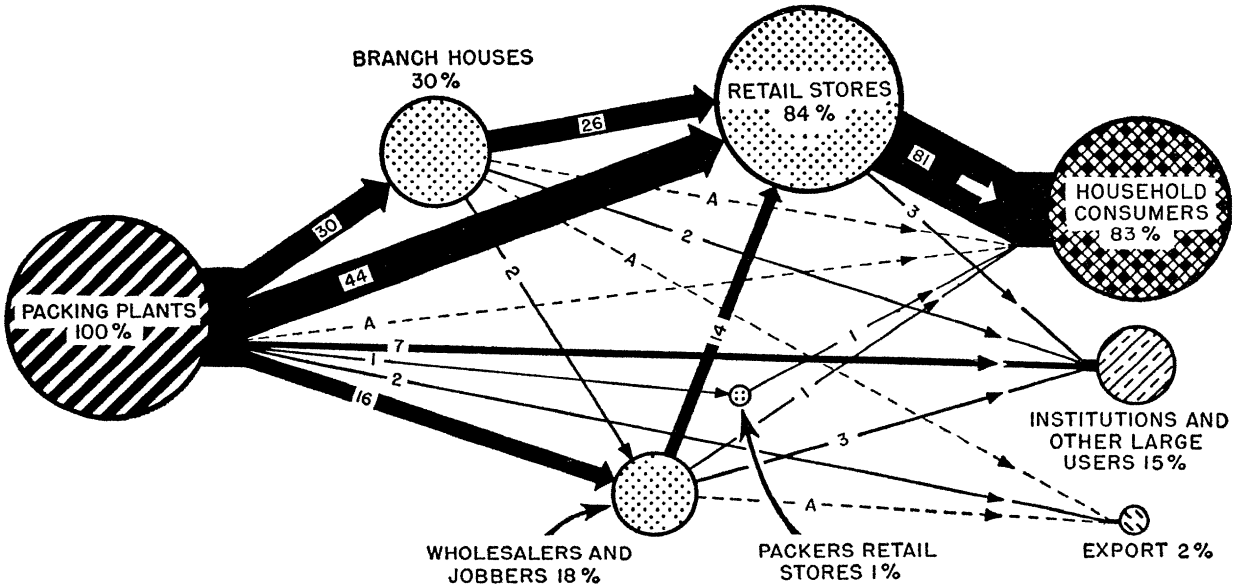


FIG. 27. CHANNELS OF MOVEMENT OF MEAT AND MEAT PRODUCTS FROM PACKING PLANTS TO CONSUMERS AND OTHER USERS, BASED ON VALUE OF PRODUCTS, 1939. (Source: Corn Belt Livestock Marketing Research Committee, U. S. Department of Agriculture)

Transportation of Livestock

In the early days, livestock were driven to market; but today, this method is not used to any great extent. Livestock move by truck, rail, water, and even by aeroplane.

Seventeen per cent of the cattle, 30 per cent of the calves, 21 per cent of the hogs, and 27 per cent of the sheep and lambs sold by farmers were moved from farms in their own trucks, more than one-half by hired truckers, and less than one-fifth by dealers who bought and took possession at the farm. Most of the livestock transported by farmers was delivered to the markets or to packing plants by truck, but small numbers were delivered to local railroad shipping points and from there shipped by rail to markets or to packing plants. Farmers in Michigan transported their own livestock in larger proportions than those in other states. In Iowa and Illinois large proportions of livestock were moved from farms by hired truckers.

Practically all of the livestock assembled locally by dealers was delivered to them by truck, rail deliveries being confined to stockers and feeders received from western ranges for local distribution. The livestock assembled by local cooperative associations, and most of that assembled at concentration yards and auctions, also was received by truck.

Truck transportation from auctions was used to move 90 per cent of the cattle, and about 85 per cent of the calves, hogs, and sheep and lambs. However, shipments from auctions by rail were important in North Dakota and Kentucky. Dealers used trucks for transporting about three-fourths of the livestock they assembled. In Iowa, nearly one-half of the cattle assembled by dealers were moved to market by rail, and rail was also used to a considerable extent for transporting livestock assembled by dealers in North Dakota and South Dakota. In Nebraska, rail transportation was used for two-thirds of the hogs. Local cooperative associations used truck and rail transportation in about equal proportions. The associations in Indiana, Iowa, and Michigan used rail transportation to a greater extent than those in other states. Some of the livestock handled by local cooperative associations was not assembled but was picked up at farms by trucks owned or hired by the associations and moved to market in these trucks. Relatively large proportions of the livestock were moved from concentration yards or local markets by rail. Rail transportation was used for more than 40 per cent of the cattle, three-fourths of the calves and hogs, and two-thirds of the sheep and lambs. Shipments by rail were relatively large from concentration yards in North Dakota, Iowa, Kansas-Nebraska, and Wisconsin-Michigan, but trucks were mostly used in Illinois.[7]

[7] *Ibid.*, pp. 110-111.

The Marketing of Flue-cured Tobacco

Tobacco is unique in the care that it demands at all stages of its production. Its culture is difficult, and it must be carefully processed on the farm before it is ready to be marketed. In the case of flue-cured tobacco, the leaves are pulled from the stalk as they mature and taken to the curing barn. Here they are tied into small bundles (looping is the technical term) on sticks and then placed on racks in the curing barn. When the barn is full, heat is applied gradually until the temperature is raised to 180°. When the leaf is properly cured, the fires are allowed to die out and barn is allowed to cool. The tobacco leaves are now dry and brittle. They are allowed to absorb moisture until they are in "order" and can be handled without breaking.

Prior to taking the tobacco to market, the farmer assorts it into several grades on the basis of such factors as color, quality, and the length and type of leaf. The leaves are then tied into hands, or bundles. Each curing is usually graded and marketed separately so that from four to six sales are made during the marketing season.

1. The tobacco auction. In the earliest days of tobacco culture, growers packed their leaf in large hogsheads and rolled the hogsheads to the nearest seaboard market. In those days, nearly all tobacco was exported. The auction system developed in the 1850's as a result of increased domestic manufacture. One of the earliest was located at Danville, Virginia. Methods used today in sale of loose leaf at auction are essentially the same as those used in Virginia nearly a century ago.

2. Method of selling at auction. The auction is conducted at a tobacco warehouse, which consists of a great expanse of floor lighted by skylights. When a farmer's tobacco reaches the warehouse, each grade is placed in a shallow basket and rolled to the scales where it is weighed. The date, initials of the seller, and the weight are recorded on a "ticket," which is placed on the top of the basket. From the scales the several baskets belonging to an individual grower are placed in a row on the warehouse floor in such order that the buyers reach the low grades first and proceed to better grades.

Prior to the sale (on those markets where Federal inspection

and market news services are provided), Federal licensed graders inspect each basket of tobacco and mark on the ticket the United States grade of the lot.

At the beginning of the sale the buyers, representing the domestic manufacturers, exporters, and dealers, line up on one side of the row. In addition to these, there are usually several individual speculators who are licensed to buy on the market. On the other side of the row are the men representing the warehouse. The "auctioneer," who follows the starter, takes up the starting price, and calls for bids. When, in his opinion, the final bid has been made, the auctioneer announces the sale to the highest bidder and passes on to the next lot. The ticket "marker," who follows the auctioneer and has been handed the ticket from the basket being sold, marks on the ticket the price, the name of the company making the bid, and the company grade of the lot, the latter being indicated by the buyer.

Two other employees of the warehouse, a "bookman" and a "clip man," follow the sale, each with blanks on which are recorded the weight and serial number of each basket of the grower's tobacco. Each of them copies from the sale tickets on the baskets the price paid and the name of the purchaser and calculates the gross amount of the sale. When calculations have been made for all lots sold by one grower, these men compare totals to see that their calculations check. One copy is sent to the office for settlement with the grower, and the other is kept as a permanent record of the warehouse.

During the sale, the grower whose tobacco is being sold is usually beside the auctioneer or warehouseman to announce, if he wishes, that his tobacco is being sold and to influence the bidding if possible. If the grower is dissatisfied with the bid on any lot of tobacco, he has the privilege of rejecting it immediately after the sale. He indicates that he will not sell by turning or mutilating the ticket.[8]

3. Redrying. When the tobacco is sold, it is immediately taken to a redrying plant, which is usually located near the auction warehouse. Here, after it has been redried and the proper degree of moisture (usually 8 to 10 per cent) added, it is packed in 1000-pound hogsheads. From the redrying plant it

[8] "Variations in Flue-cured Tobacco Prices," pp. 6-8. North Carolina Agricultural Experiment Station, *Technical Bulletin No. 69*, 1942.

is transferred to the manufacturer's warehouse where it is held in storage about two years before being processed.

The Marketing of Fruits and Vegetables

The marketing of fruits and vegetables presents some interesting and complex problems. In most cases the products are perishable, semi-perishable, and bulky, and they are often produced long distances from the consuming centers. This combination of perishability, bulkiness, and long-distance shipping involves the use of special equipment, such as refrigerator cars or trucks, containers to protect the product from injury in handling, and inspection both at the local shipping point and at the terminal market. All of these are essential as means of getting the products from the producer to the consumer in edible condition. Processing and storing are also often necessary. The discussion of these problems will be limited to the indication of the areas of production, the major channels of distribution, and the sequence in marketing of the major products in this classification.

1. Location of producing areas. The marketing of these products is complicated by the wide geographic distribution of the producing areas. For example, potatoes are raised in every state and on nearly every farm. Apples are produced in three-fourths of the states. But in spite of this wide distribution of production, there is a decided tendency toward localized production. Maine produces 17 per cent of the nation's potato supply. North Carolina and Louisiana together furnish 25 per cent of the sweet potatoes, and Washington furnishes 26 per cent of the apples. California leads the nation in the total amount of fruits and vegetables she produces. The irrigated valleys of the West are ideal for truck crops, as well as for oranges and peaches.

2. Channels of distribution. The principal channels for marketing fruits and vegetables are from the producer, through the country shipper or the cooperative marketing association, to the wholesale receiver and jobber, then to the retailer, and finally to the consumer. Figure 28 shows the flow of both fruits and vegetables through the marketing channels and the proportion of the total volume that is handled by each. About 70 per cent of the commercial fresh fruits and vegetables pass

through the wholesale receivers and jobbers. The balance is channeled from the producer to the consumer through a large number of other agencies, such as roadside markets, hucksters, direct selling to the housewife, and farmers' curb markets.

3. Marketing at country points. When fruits and vegetables enter the local market, they may be disposed of in one of several ways. The producer may sell his product to a private buyer; he may channel it through a local cooperative association; he may sell at auction; or he may sell on consignment. The facilities available are usually confined to loading sheds, display space, and, if products are sold at auction, an auction platform.

TABLE 20

PRODUCTION OF SELECTED CROPS FOR LEADING PRODUCING STATES IN 1944*
(As a percentage of total for the United States)

State	*Oranges*	*Apples*	*Peaches*	*Truck*	*Snap Beans*	*Onions*	*Tomatoes*	*Sweet Potatoes*	*Irish Potatoes*
Arkansas			3.15						
California	50.1	5 32	46.78	23.15		10 15	16.69		11 25
Colorado			3.11			16.63			5.72
Florida	45.1				15 28				
Georgia			6.48					8.03	
Idaho									11 00
Indiana				5.06					
Louisiana								13 61	
Maine									17.23
Maryland					6.95				
Michigan		6 24	5.18						4 00
New Jersey				4.67			7.58	6 90	
New York		13 74		8 85	9.77	15.30	7.93		
North Carolina								11.89	
North Dakota									5 56
Oregon					11.25	6.92			
Pennsylvania		6.85							4.68
South Carolina			3.37					8 24	
Tennessee					5.19				
Texas				5.30		11.52	17.09	8 93	
Virginia		11.59							
Washington		25 95	3.73						
Wisconsin					7.15				
Total from selected states	95.2	69.69	71.80	47.03	55.59	60.52	49.29	57 60	59.44
Per cent crop sold	98 6	93 62	89.72					41.46	75.1

* Source. Adapted from "Farm Production, Farm Disposition, and Value of Principal Crops," U S Department of Agriculture, Bureau of Agricultural Economics.

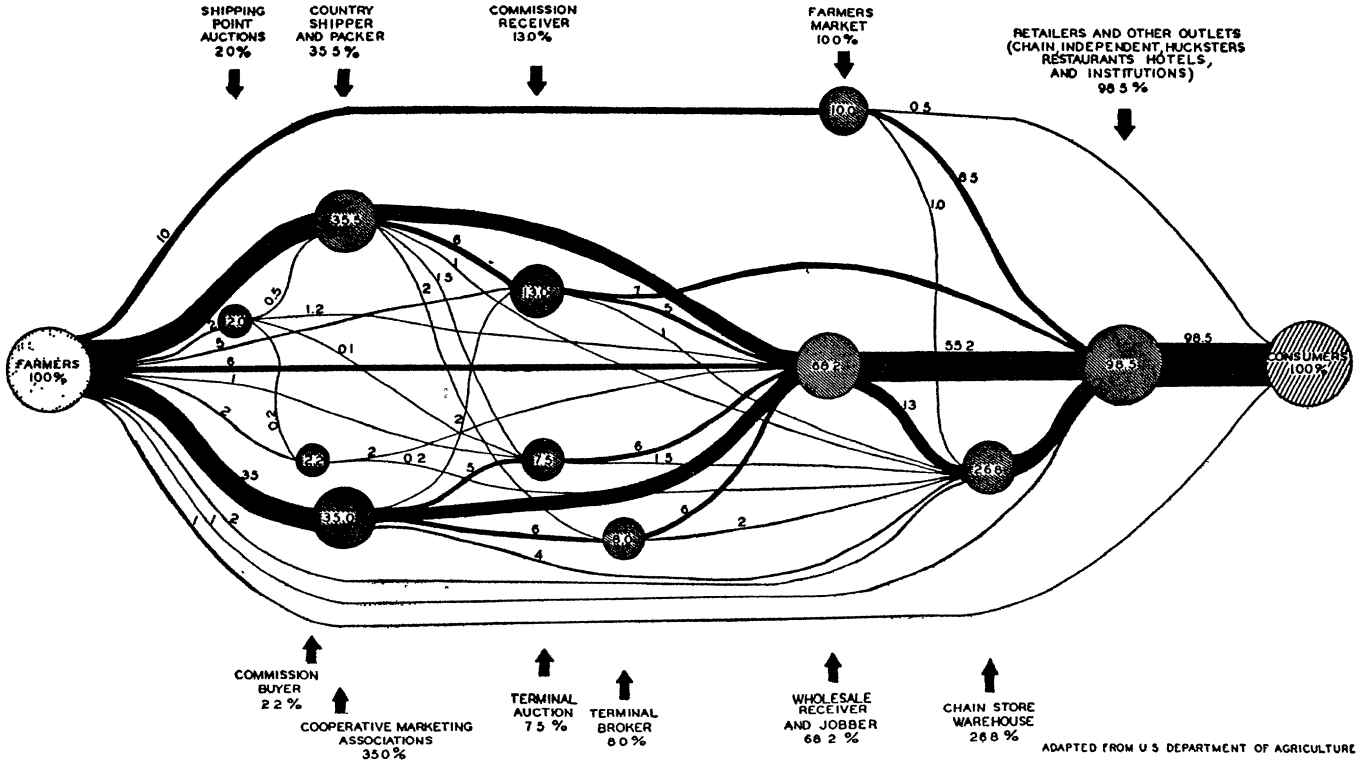

SHIPPING POINT AUCTIONS 20%
COUNTRY SHIPPER AND PACKER 35 5%
COMMISSION RECEIVER 13.0%
FARMERS MARKET 100%
RETAILERS AND OTHER OUTLETS (CHAIN, INDEPENDENT, HUCKSTERS RESTAURANTS HOTELS, AND INSTITUTIONS) 98 5%
FARMERS 100%
CONSUMERS 100%
COMMISSION BUYER 22%
COOPERATIVE MARKETING ASSOCIATIONS 350%
TERMINAL AUCTION 7 5%
TERMINAL BROKER 8 0%
WHOLESALE RECEIVER AND JOBBER 68 2%
CHAIN STORE WAREHOUSE 26 8%
ADAPTED FROM U S DEPARTMENT OF AGRICULTURE

FIG. 28. MARKETING CHANNELS FOR FRESH FRUITS AND VEGETABLES, BASED ON ESTIMATED PERCENTAGE OF TOTAL SALES, UNITED STATES, 1939

Sometimes grading and packing facilities are available. If the product is one that is usually processed, in whole or in part, there may be storage facilities and processing plants. Most, if not all, of these markets will be located near or adjacent to rail transportation or will be accessible to a paved highway over which the products may be shipped by truck.

4. City markets. Most of the locally produced fruits and vegetables find their way into the nearby city retail markets. Here will be found retailers, jobbers, truckers, and hucksters. Occasionally a wholesaler will be found operating in a city market, but commission men seldom use a city market in which to conduct their operations. (See Tables 21, 22, and 23.)

TABLE 21

ESTIMATED VALUE OF PRODUCTS SOLD BY GROWERS, FARMER-DEALERS, AND TRUCKERS TO VARIOUS TYPES OF BUYERS ON FOUR NEW YORK REGIONAL MARKETS, 1939-1940*

Type of Buyer	*Proportion of Total Dollar Sales in Each Group*			
	Buffalo	*Rochester*	*Syracuse*	*Menands*
	(*per cent*)	(*per cent*)	(*per cent*)	(*per cent*)
Chain retailers	4	11	3	2
City peddlers	24	18	23	14
City wholesalers	9	4	2	6
Consumers	5	14	24	1
Hotels and restaurants	1	1	1	†
Independent retailers	44	41	25	9
Out-of-town buyers	13	11	22	67
Others	†	†	†	1
Total	100	100	100	100
Total dollar volume	$2,420,505	$2,741,015	$1,670,698	$1,191,285

* Source "Regional Markets in New York State," Cornell University Agricultural Experiment Station, *Bulletin No 801*, 1943

† Less than one per cent

Facilities at these markets are usually quite limited and seldom adequate. A street or a square may be set aside as a market place. There may be a shed or a building in which products may be displayed and sold. Weighing devices are usually provided by the seller or the buyer, although in some public markets scales may be a part of the equipment. Grading and packaging are usually done, if at all, by the producer.

TABLE 22

ESTIMATED ANNUAL DOLLAR VOLUME OF PRODUCE SOLD BY CITY WHOLESALERS TO VARIOUS TYPES OF BUYERS AT FOUR NEW YORK REGIONAL MARKETS, 1939-1940*

Type of Buyer	*Proportion of Total Dollar Volume Purchased by Each Group*			
	Buffalo†	*Rochester*	*Syracuse*	*Menands*
	(*per cent*)	(*per cent*)	(*per cent*)	(*per cent*)
Independent retailers	43	36	26	21
Out-of-town buyers.	20	26	26	54
Chain retailers .	15	19	22	8
City peddlers	11	7	16	5
Others‡	11	12	10	12
Total..	100	100	100	100
Total dollar volume	$13,380,000	$5,310,000	$4,231,000	$6,035,500

* Source "Regional Markets in New York State," Cornell University Agricultural Experiment Station, *Bulletin No 801*, 1943

† Niagara Frontier Food Terminal district only

‡ Includes other wholesalers, hotels, restaurants, and others

TABLE 23

VOLUME OF SALES ON ALBANY PUBLIC MARKET DURING 1930 TO DIFFERENT CLASSES OF BUYERS*

Class of Buyers	*Value of Sales by*				*Proportion of Sales by*			
	Growers	*Trucker-Dealers*	*Market-Hucksters*	*Total*	*Growers*	*Trucker-Dealers*	*Market-Hucksters*	*Total*
	($000)	($000)	($000)	($000)	(%)	(%)	(%)	(%)
Intercity.....	1,306	219	0	1,525	47 5	39.2	.	44 8
Consumers..	430	144	20	594	15 6	25 7	21.1	17.4
Retail stores.	397	95	77	569	14.4	17.0	78.9	16.7
City peddlers	456	90	0	546	16.6	16.1		16.0
Wholesalers and jobbers	138	5	0	143	5.0	0.9		4.2
Market-hucksters..	25	6	0	31	0 9	1.1		0.9
Total.....	2,752	559	97	3,408	100.0	100.0	100 0	100 0
Percentage.	80.7	16.4	2.9					

* Source: "An Economic Study of the Marketing of Certain Perishable Farm Products in Albany, New York," Cornell University Agricultural Experiment Station, *Bulletin No. 585*, February, 1934, p. 7.

5. Large urban centers. Into these centers flow the products from the large commercial producing areas. In some cases these markets serve as diversion points from which the fruits and vegetables are reshipped or diverted to other cities or towns, or to foreign countries. The major operators are wholesalers, wholesale-jobbers, brokers, and commission men. A survey of Kansas City market shows that the wholesale-jobbers handle approximately 65 per cent of the total sales. The facilities of these markets, aside from transportation, usually are supplied by the large dealers. In some instances, the city may provide the location and some of the buildings and equipment. As a rule, such markets are inadequate for handling the volume of products that they are called upon to disperse. A description of the facilities to be found at Kansas City has already been given.

Influence of Latitude on Marketing of Fruits and Vegetables

There is a large and insistent demand at all times for fresh fruits and vegetables, and producers look forward to each year's new crop to supply the waiting consumer. Nature has provided a means by which the supply is distributed over a longer period of time than one single source could cover. As spring moves north, successive areas come under its influence, and the new crop comes to market in sequence. Potatoes, perhaps the most widely produced vegetable, illustrate this tendency. The early-producing states are those of the South, and California; the intermediate states are Wisconsin, Kentucky, Virginia, and New Jersey; the northern states are late producers.

Within these groups the sequence of crop maturity holds. This is illustrated diagrammatically in Figure 29 "Carlot Shipments of Early Potatoes." This figure shows the volume of early potatoes that moved to market by weekly periods from April 15 to July 29, 1944. The bulk of the potatoes were shipped out of Florida during the first five weeks of the shipping period or from April 15 to May 13. After this the shipments declined rapidly. In the meantime shipments from California had begun to assume a position of dominance. Shipments from this state tended to bulk large from May 13 to July 8. Shipments from Alabama edged in about May 6 and continued to be quite large to the week of May 27. Louisiana also competed with

Alabama during this period but continued to ship considerable potatoes up to June 10. South Carolina entered the picture about June 3 and was almost out of the market by the end of June 10, when North Carolina potatoes were reaching maximum volume. This state continued to ship in volume until July 15 and competed with Virginia during June 24 to July 15.

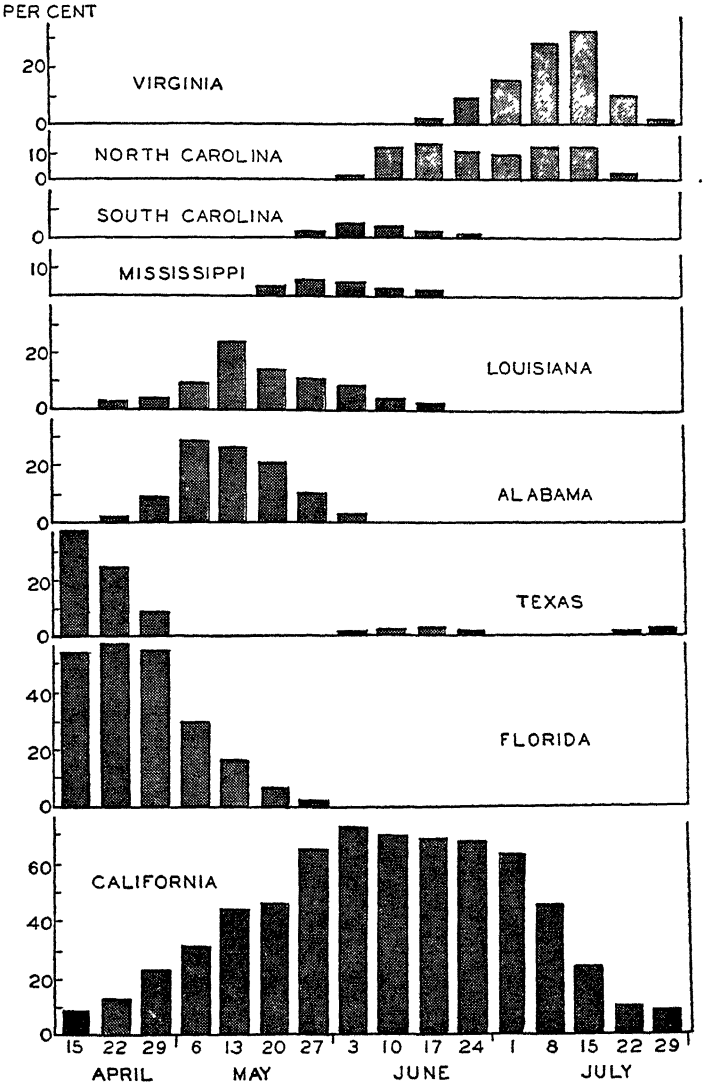


FIG. 29 UNITED STATES WEEKLY CARLOT SHIPMENTS OF EARLY POTATOES BY STATES OF ORIGIN.

TABLE 24

UTILIZATION OF EGGS IN THE UNITED STATES*

Use	Shell Eggs	Liquid and Frozen Eggs					Dried Eggs			All Eggs	
		Whole or Mixed	White	Plain Yolks	Yolks Processed with Salt	Yolks Processed with Sugar or Glycerin	Whole	Whites	Yolks	Quantity	Percentage
	1,000 dozen	1,000 dozen	1,000 dozen	1,000 dozen	1,000 dozen	1,000 dozen	1,000 dozen	1,000 dozen	1,000 dozen	1,000 dozen	
Table use	2,132,000	—	—	400	—	700	—	—	—	2,133,100	80 46
Noodles	—	2,000	—	4,800	—	—	34	—	2,344	9,178	.35
Bakery products	20,000	86,000	37,000	7,100	—	10,000	630	326	18,358	179,414	6.77
Salad dressings	—	3,000	—	2,200	2,500	400	—	—	—	8,100	.31
Mayonnaise	—	—	—	6,600	7,500	1,500	8	—	1,562	17,170	.65
Ice cream, etc	—	2,000	1,000	700	—	1,400	8	—	11,718	16,826	63
Confectionery	—	—	10,000	—	—	—	—	1,050	—	11,050	.42
Prepared flour	—	—	—	—	—	—	84	42	3,906	4,032	.15
Food-beverage products	—	—	—	—	—	—	25	—	391	416	.02
Prepared puddings and meringues	—	—	—	—	—	—	17	347	391	755	.03
Bird and animal food, etc.	—	—	—	—	—	—	34	—	—	34	—
Pharmaceutical and photographic	—	—	—	—	—	—	—	42	—	42	—
Industrial	6,850	—	—	—	—	—	—	295	—	7,145	.27
Hatching	113,000	—	—	—	—	—	—	—	—	113,000	4.26
Other uses	20,000	—	—	200	—	—	—	—	391	20,591	.77
Losses (rots, broken, etc.)	130,150	—	—	—	—	—	—	—	—	130,150	4 91
Total	2,422,000	93,000	48,000	22,000	10,000	14,000	840	2,102	39,061	2,651,003	100 00
Per cent of all eggs	91 36	3.51	1.81	.83	.38	.52	03	.08	1 48	100	—

* Source: "Eggs and Egg Products," U S D. A. *Circular No 583*, January, 1941, Table 2, p 7.

and eggs have drawn attention to the ways in which these products are marketed. It may be expected that great improvement in this field will be made. It is not the purpose of this discussion, however, to predict the future but rather to describe how these products are marketed today.

Eggs and poultry may be marketed in a number of ways. The direct way is from producer to consumer. Often, however, the producer will sell not to the consumer but to some middleman, such as the retailer. In this case, eggs and poultry take the producer-retailer-consumer route. It is not always convenient to market these products in either of these ways because of the distance between the producer and the consumer. Under such conditions, the marketing route becomes more complicated. The most simple of the more complex routes is the addition to the middlemen of the pick-up men or hucksters. When one of these middlemen is added, the route looks something like this: producer—pick-up man—distributer—retailer—consumer. Not infrequently, the task of marketing eggs and poultry requires the intervention of other middlemen, who may be either distributors, cooperative associations, or shippers. When this occurs, the route becomes: producer (distributor, cooperative, shipper)—chain store—retailer—consumer. Finally, when eggs and poultry enter a metropolitan market, brokers and wholesale receivers are needed. In such cases, the products may be routed as follows: producer—distant shipper (broker, wholesale receiver)—distributor—retailer—consumer. These various channels are depicted as follows:[9]

1. Producer—Consumer
2. Producer—Retailer—Consumer
3. Producer—Distributor—Retailer—Consumer
4. Producer—Pick-up Man—Distributor—Retailer—Consumer
5. Producer [Distributor / Cooperative / Distant Shipper] —Chain Store—Retailer—Consumer
6. Producer—Distant Shipper [Broker / Wholesale / Receiver] —Distributor—Retailer—Consumer

[9] "Egg Marketing in the Los Angeles Area," p. 6. California Agricultural Experiment Station, *Bulletin No. 656*, 1941.

2. Types of market and agencies.

a. Country points. The country store is an important market for eggs and, to a lesser extent, for poultry. Here the farmer or the farmer's wife brings eggs and buys groceries or other commodities that the store has to offer. Not infrequently the eggs are sold on account or are credited to the account of the seller in the event that he or she has a charge or trade account. To encourage trade, the storekeeper often will pay a premium of a few cents above the nearby city market. Thus, the country merchant becomes a middleman in the marketing of poultry and eggs. Any surplus, above that which he can sell to his customers, he will dispose of to hucksters or to the nearby city market.

The volume of poultry and eggs marketed through the local stores varies widely; but, as a number of studies have shown, it may be as high or somewhat higher than 20 per cent of the total. Thus, Abrahamsen found in a study in West Virginia that 21.8 per cent of the eggs and 6.6 per cent of the poultry were sold in this manner.[10]

b. City markets (stores, restaurants, and hotels). Most of the poultry and eggs, even if they are first sold at country points, reach the urban markets. The chief urban outlets are retail grocery stores, restaurants, boarding houses, hotels, and inns. These take about 30 to 40 per cent of the eggs and about 25 to 30 per cent of the poultry. They buy their products from farmers, wholesalers, pick-up men, or hucksters. White, in a study of this subject, found that about 59.5 per cent of all the eggs bought by retail stores were purchased from farmers; 26.3 per cent, from wholesalers; 12.9 per cent, from pick-up men; and 1.3 per cent, from other sources.[11]

c. Metropolitan markets. Poultry products that are not sold at country points or in urban areas are shipped to metropolitan areas or exported to foreign countries. In the markets in these areas are found the broker, wholesale receiver, processor, chain store, and exporter.

The broker is one of the important middlemen in the large

[10] Martin A. Abrahamsen, "Eggs and Poultry Marketing Practices in West Virginia," West Virginia Agricultural Experiment Station, *Bulletin No. 323*, 1945.

[11] Harry A. White, "Quality and Price of Eggs in North Carolina." M.S. thesis, North Carolina State College, 1944.

city markets. He is used largely by shippers and packers. For example, in the Baltimore market, brokers sold about 175,767 cases or about 18 per cent of the eggs entering the market in 1937. The eggs are billed directly to the buyer when the broker is used. He does not handle the eggs. His function is to serve other middlemen.[12]

Wholesalers, commission men, and jobbers also operate in the egg and poultry markets. In the Baltimore market these middlemen handled about 419,091 cases of eggs, or 43 per cent of all the eggs sold and "purchased outright 79 per cent of all the eggs handled.[13] Of these, 20.3 per cent were handled on a commission basis; and .7 per cent were sold on a brokerage basis. Sales of less than 5 cases at a time were considered as job lot sales and constituted 40.7 per cent of all sales; 59.3 per cent of the eggs were sold in wholesale lots, or in lots of more than 5 cases at a time."[14]

Meat packers are important operators in the egg market. In a large city market, they will buy eggs to supplement their meat business. "The sale of eggs has provided meat packers with an additional source of income and allowed them to supply a large portion of their customers' needs. Eggs also fit in well as a sideline with meats because it is necessary to deliver both frequently under refrigeration."[15]

Chain stores buy eggs and poultry in the big city markets for resale directly to consumers.

The Marketing of Milk and Its Products

Milk may be marketed as such, or converted into a number of products such as cheese, butter, and ice cream. It may also be reduced in bulk and made less perishable by the elimination of a large part of its water content. The products emerging from this process are known in the trade as "condensed" or "evaporated" milk and milk powder. Milk may also be treated mechanically and broken down into two subproducts, cream and skim milk. Because of the variety of

[12] L. E. Cron, R. F. Burdette, and S H. DeVault, "Economic Analysis of the Baltimore Egg Market," Maryland Agricultural Experiment Station, *Bulletin No. 430*, 1939.

[13] These include purchases by meat packers.

[14] L. E. Cron, R. F. Burdette, and S. H. DeVault, *op. cit.*

[15] L. E. Cron, R. F. Burdette, and S. H. DeVault, *op. cit.*, p. 128.

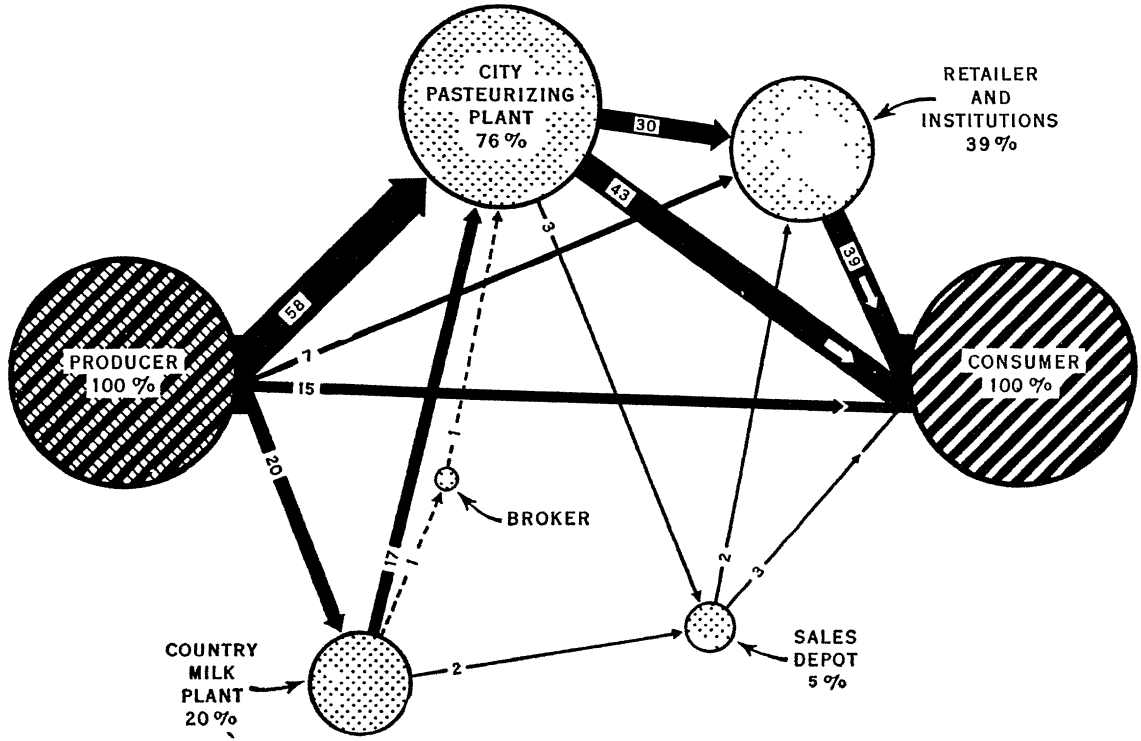


FIG. 30A. MARKETING CHANNELS FOR FLUID MILK, UNITED STATES, 1939 (Estimated). (Source: U. S. Department of Agriculture, Bureau of Agricultural Economics.)

milk products varying markedly in character, a discussion of milk marketing as such is impossible. For this reason attention will be directed to the marketing of whole milk, butter, and cheese.

1. Fluid milk. The methods of marketing milk in its natural form apply also to cream, skim milk, and buttermilk. Whole milk and derived products are usually marketed by one of the following:

a. Producer-distributor. In this case the producers process their milk at the farm and sell it directly to retailers or consumers. The processing at the farm may consist of pasteurizing the milk, bottling, separating the milk into skim milk and cream, and making buttermilk.

b. Commercial-distributor. Producers, instead of marketing the milk themselves, may sell their milk to commercial distributors, who in turn perform the function of processing the milk, putting it into suitable containers, and selling it to retailers or to consumers, to other distributors, or to manufacturers of butter, cheese, ice cream, or other dairy products.

c. Producer-cooperative-distributor. The only difference between this and methods *a* and *b* is that the producers form a cooperative, which performs the same services as the commercial distributors.

d. Commercial-processor-distributor. A large part of the milk produced is marketed by commercial processors. These are usually large organizations that process and package the milk and sell the products as condensed or evaporated milk and milk powders to the wholesale distributors, jobbers, and retailers.

2. Butter. The manufacture of butter, although not a difficult task, must be done under specific conditions and according to well-established routines if an acceptable product is to emerge. For this and other reasons, methods of marketing butter are somewhat different from those commonly used in the marketing of fluid milk. In most cases butter on its way to the consumer passes through one of the following channels (see Figure 30B):

a. Producer-distributor. Butter may be made at the farm and sold directly to the consumer. This method is not, except in some areas, of great commercial significance. The chief reason is that farmers do not have the facilities nor do they

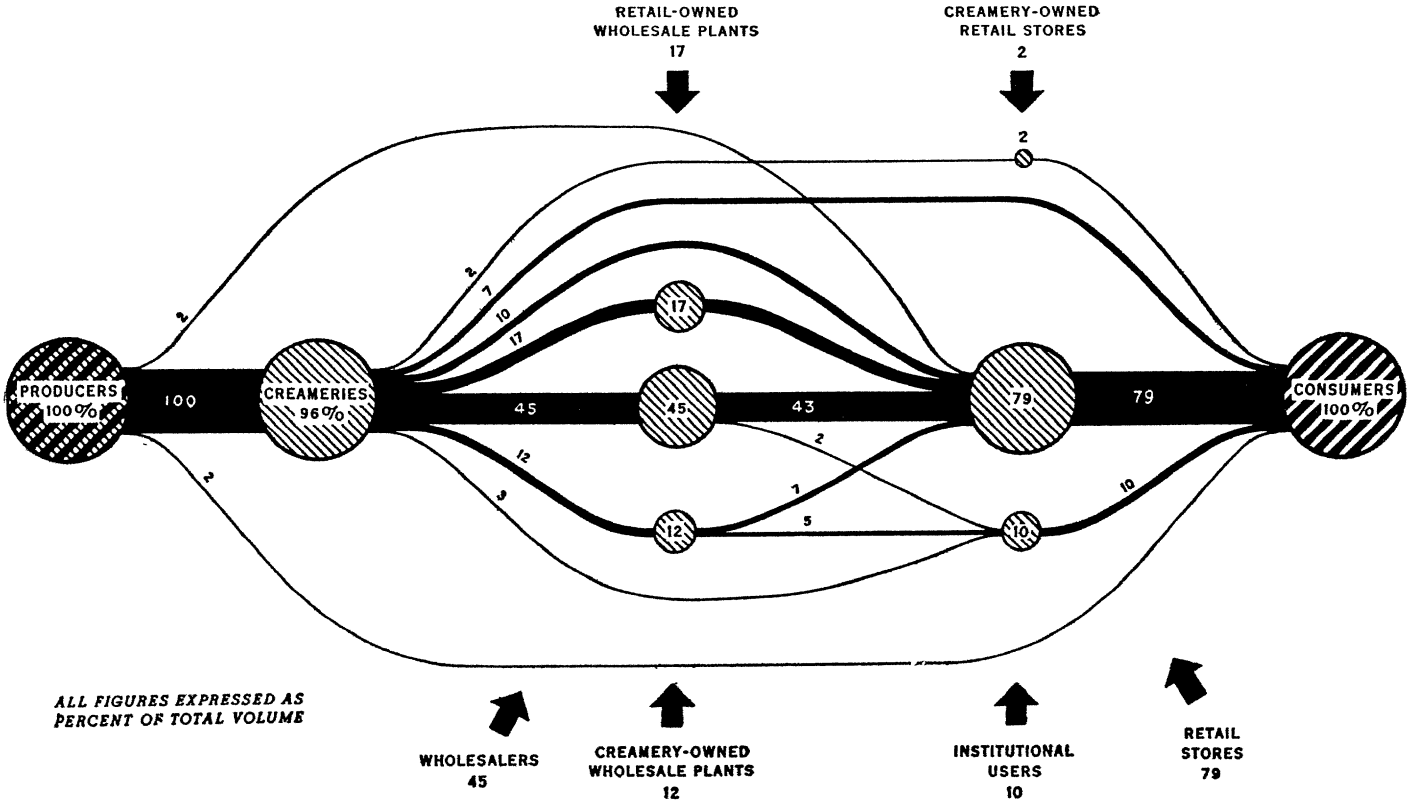


FIG. 30B. MARKETING CHANNELS FOR BUTTER, UNITED STATES, 1939 (Estimated). (Source: U S Department of Agriculture, Bureau of Agricultural Economics)

possess the techniques essential to the production of acceptable commercial products.

b. Commercial-manufacturer. About 37 per cent of all butter produced for sale is made by commercial manufacturers. The farmers who, for various reasons, find it more profitable to produce cream than to sell whole milk, sell their cream to commercial manufacturers of butter. Commercial manufacturers, however, do not depend solely on individual farmers for their source of supply. On the contrary, they may buy their cream from independent commercial creameries, or the manufacturers may establish their own creameries. In either case, the milk, not the cream, is sold to these creameries, and the cream is separated from the whole milk. Since World War II receiving commercial plants manufacture both butter and milk powder.

These creameries may process the cream into butter. From these commercial establishments the butter may be marketed through one of several middlemen. Wholesale receivers sell directly to the retailer, or market through the manufacturers or agencies established solely to market the butter to the retailer. Butter brokers are not uncommon. These, as is their custom, contact the manufacturers, wholesalers, jobbers, retailers, and large scale consumers, such as hotels and restaurants. In a few instances the manufacturers establish their own retail outlets.

c. Cooperative-manufacturer. Producers do not depend solely upon private commercial manufacturers to process their milk into butter. There are a number of cooperative associations that have been organized to perform this function. These cooperatives may act also as the sales agency in disposing of the butter to the trade or they may organize a sales agency. For example, the Land O'Lakes Creameries (see Chapter 17) is the sales agency for over 470 cooperative creameries. Such cooperative sales agencies may sell their products to wholesalers, jobbers, retailers, or through brokerage firms.

3. Cheese. This product, unlike fluid milk and butter, is seldom produced for sale at the farm level. It is a commercial manufactured product, or, more correctly, a series of products, since cheese is not a homogeneous product. On the contrary, there are several types that, collectively, may be called "stand-

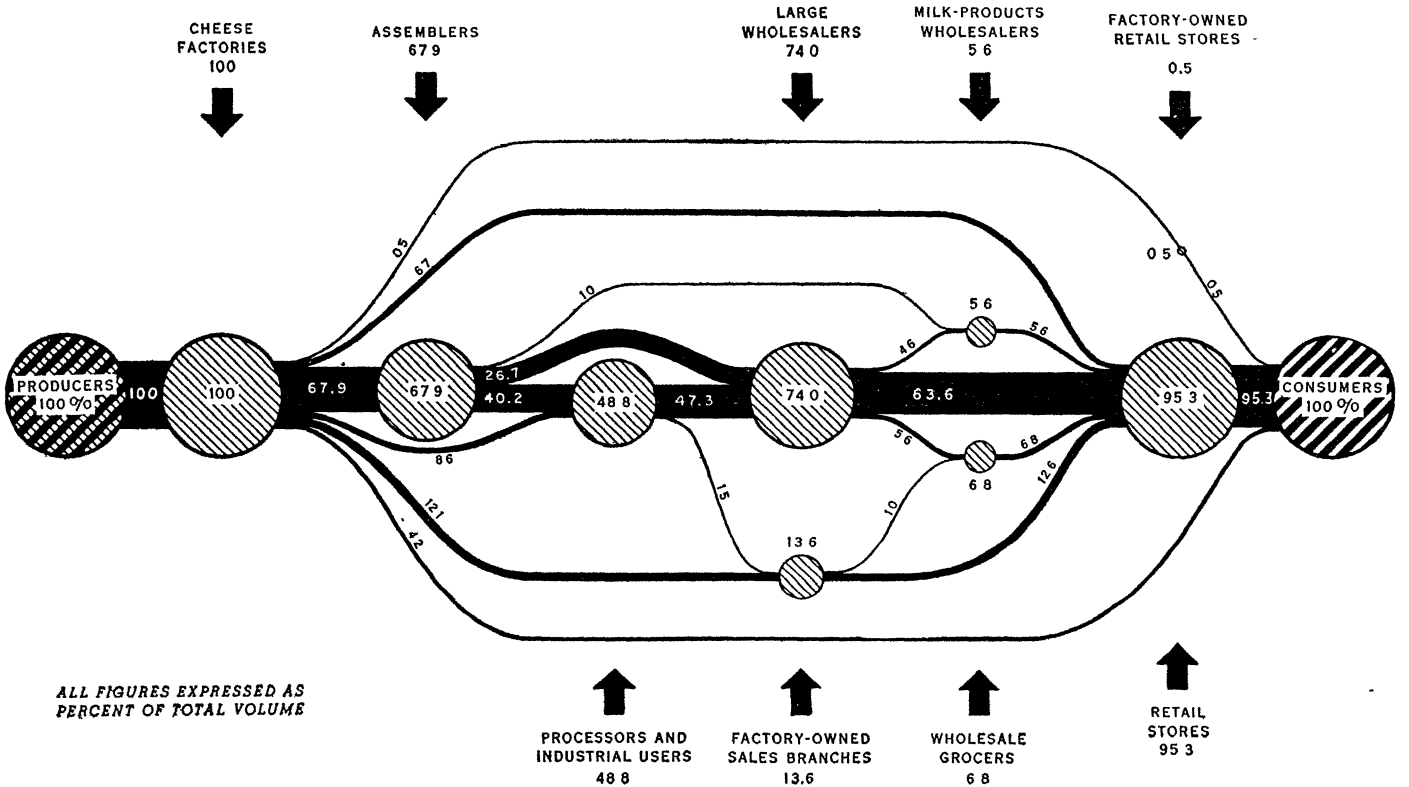


FIG. 30C. MARKETING CHANNELS FOR AMERICAN CHEESE, UNITED STATES, 1939 (Estimated). (Source: U. S. Department of Agriculture, Bureau of Agricultural Economics.)

ard" or "bulk" cheeses, such as Swiss, American, Limburger, and Brick. To these must be added the processed cheeses that use the standard cheeses as a base, but differ from them in flavor and texture. Most processed cheeses are sold under specific trade names.

To trace all of these cheeses through the marketing channels would require a detailed statement on each product. Such a discussion would be enlightening but more suited to a text on marketing farm products. For this reason this discussion will be limited to the marketing of "bulk" and not "processed" cheeses. (See Figure 30C.)

a. Local cheese factories. Since the manufacturing of cheese is too complicated a task to be done at the farm, producers sell their whole milk to local cheese factories or to receiving stations from which the milk is shipped to more distant cheese factories. The local factories may act as their own sales agency, or they may use a regional or national sales agency to merchandize their product. From the local or regional factories the product may reach the consumer by several routes. The greater part of the output will go directly to "assemblers" who supply the manufacturers of "processed" cheeses, large wholesalers, and retailers. To some extent the cheese may be shipped directly from the factories to the retailer, or the factory-owned sales agencies, and then to the retailer.

b. Cooperative marketing. In some cases local cheese factories are producer-owned and operated. In such cases the factories may federate and establish a cooperative sales agency through which all cheese is marketed. This sales agency in marketing the product(s) may sell directly to retailers, to wholesale distributors, or to manufacturers of "processed" cheeses.

Questions

1. What "technical" or trade terms are used in the marketing of livestock?
2. What types of markets are used in marketing livestock?
3. Trace the "routes" that livestock may take from the farmer to (*a*) the packing plants, (*b*) the consumer.
4. Describe briefly how flue-cured tobacco is sold.
5. What special problems emerge in the marketing of perishable products, such as fruits and vegetables.

6. Trace the "routes" that vegetables may take from the producer to the consumer.
7. Describe how eggs are marketed and indicate routes they may take from the producer to the consumer.
8. Name the various types of milk products.
9. In what ways are fluid milk, butter, and cheese marketed?
10. What is meant by "processed cheeses"?

References

Clark, Fred E., and Weld, L. D. H., *Marketing Agricultural Products*, Chapters V, VIII, and IX. New York: The Macmillan Company, 1938.

Converse, Paul D., and Huegy, Harvey W., *Elements of Marketing*, Chapters 21 and 22. New York: Prentice-Hall, Inc., 1947.

Shepherd, Geoffrey S, *Marketing of Farm Products*, Chapters 4, 5, and Part III. Ames: The Iowa State College Press, 1946.

CHAPTER 16

Cooperative Marketing and Purchasing

To OFFSET imperfect and monopolistic competition that prevails in the nonagricultural sectors of our economy, farmers have developed and perfected marketing and purchasing organizations known as "cooperatives." Buying and selling through such cooperatives, farmers have been able, in part at least, to deal on equal terms with other forms of competitive corporations. Farmer cooperatives are essential because, as one student of the cooperative movement says, "Modern business in all fields is tending toward monopolistic capitalism. . . . Cooperation, on the other hand, distributes wealth and puts in the hands of the people a powerful instrument against the assaults of monopoly."[1]

Private and Cooperative Business Units Contrasted

There are several characteristics of cooperative effort that serve to distinguish it from private business. The differences between the two are imbedded in their objectives, in their methods of organization and incorporation, in their membership, government, operation, and price margins, and in the distribution of savings.[2]

1. Purpose. The chief purpose of a private corporation is to obtain the maximum net profit for the benefit of the stockholders and not for the persons or agencies that it serves. On the other hand, the objective of a cooperative association is to benefit its patrons. This may be done in several ways. In a marketing association, it is accomplished by the distribution of a part or all of the net margins[3] to each patron on the basis of the business done by him with or through the association. In some associa-

[1] M. M. Coady, "The Social Significance of the Cooperative Movement," pp. 18-19. Washington, D. C.: The Cooperative League of the U.S.A., 1945.

[2] H. A. Bakken and M. A. Schaars, *Economics of Cooperative Marketing*, p. 15. New York: McGraw-Hill Book Company, Inc., 1937.

[3] The difference between the gross receipts and the cost of operation.

tions, the business is conducted on a cost basis; in this case no undistributed proceeds or net margins are available for distribution, but the benefit is received in a lower cost or higher prices to the patron.

2. Organization. Farmer cooperative associations are organized on the basis of farmer or producer membership. To state this idea in another way, producers own and operate their cooperatives. This is not true of privately owned and controlled corporations, which are controlled by the stockholders (persons or agencies that become members of a corporation through the purchase of common stock). Although a cooperative may be organized on a common stock basis, the amount that may be owned by an individual is usually limited.

3. Incorporation. To form a legal entity farmers may incorporate under general corporate laws or they may take advantage of specific laws designed for their use. The general law of most states does not provide ways and means by which the net savings of the corporation may be distributed to those who make use of the corporation's services. It is permissible, however, for a privately owned and controlled corporation to enter into an agreement with its customers to distribute net earnings on some workable basis, such as the volume of business done by each customer on record. Such contracts can be made if they are fully provided for in the by-laws; and, under such circumstances, the corporation assumes, in part at least, the nature of a cooperative association. But as a usual thing, farmers find it to their advantage to incorporate under what are called "cooperative laws," which, as a rule, require that cooperatives must, after all legal and necessary reserves have been provided for, distribute their net margin in the form of patronage dividends.

4. Membership. To assist farmers in maintaining control of their cooperatives, membership is usually limited to farmers. Furthermore, the membership may be limited to farmers who possess certain qualifications, to farmers who are producers of specified products, or to farmers who have demonstrated an ability and willingness to cooperate. Neither is it possible to transfer membership to those who are nonfarmers or nonproducers of farm products. On the other hand, corporations, as a rule, have no such limitations on membership. Anyone who

has the ability to buy common stock, possessing voting privileges, may become a stockholder of a corporation.

There is also a limitation on the transfer of common stock, which is different in the two types of organization. In the case of most cooperatives, common stock cannot be transferred to nonfarmers and can be transferred only with the consent and approval of the board of directors. Corporations, unless they are closed corporations, do not restrict the sale or transfer of stock, except that such a sale or transfer must be made a matter of record on the books of the corporation.

5. Control. An important difference between a corporation and a cooperative association lies in the forms of control. Equality in the control of the affairs of the association is one of the oldest principles of cooperative endeavor. The "one-man-one-vote" rule is generally accepted but is not universal. Sometimes equality in voting among the members of a capital stock association is furthered by limiting the number of shares a member may own. A study by the Farm Credit Administration reveals that 86 per cent of the 10,000 associations studied used the one member-one vote principle; the others used stock ownership or patronage as the basis.[4] The voting privilege of a corporation is vested entirely in the common stockholders, proportionally to the number of shares of stock held. It is therefore possible that control of a corporation may rest with those who own as much as 51 per cent of the common stock.

6. Operation, prices, and margins. There are also important differences between cooperatives and private corporations in the object for which they are organized. A cooperative is designed to benefit its members, whereas a corporation is designed to benefit only its stockholders, unless other arrangements have been made (see item 3). It should also be said that a corporation, especially if it has monopoly characteristics, will operate on as wide a margin as possible. This is not true of a cooperative, which usually will operate on customary or competitive margins or it may operate on the narrowest margin possible consistent with financial stability.

7. Patronage. It may appear from what has been said that a cooperative association must depend solely upon its members

[4] "Statistical Handbook of Farmers' Cooperatives," Farm Credit Administration, *Bulletin No. 26*, p. 8., 1938.

for use of its services. But this is not necessarily true. The laws under which cooperatives may be organized usually provide that nonmember business may not exceed in value that of members.[5] On the other hand, corporations seldom, if ever, depend upon their stockholders as the sole support of their business. Their customers are limited to only those who can pay for the products or services offered for sale.

Types of Cooperative Organizations

There are several ways of classifying cooperatives. They may be marketing, purchasing, or service organizations; they may market only one or more than one commodity; they may be restricted to one locality or cover several states. Perhaps the most useful classification is the one based on the degree and nature of their combination into operating units. If this basis is used, cooperatives may be classified as local, federated, or centralized.

1. Local. At the local level, membership consists of the farmers living within an area tributary to some town or an area usually spoken of as a trading area. Farmers' local grain elevators, livestock shipping associations, and cooperative creameries are examples of this type of organization.

2. Federated. Local cooperatives may be organized into regional, state, or national associations. When so organized, they become federated or joined together, not on the basis of membership in the locals, but on the basis of the local groups becoming the unit of membership in the federation. (See Figure 31.) The procedure of federation is about as follows:

> Growers are members of local associations. The local associations are, in turn, members of the federation. The locals own and control their physical facilities and perform such functions as grading and packing, while the federation performs such services as the selling of products, collection of sales proceeds, promulgation and supervision of regulations relating to grades and preparation of members' products for market, joint purchasing of supplies, and the handling of transportation claims.[6]

3. Centralized. This method of organization differs markedly from a federated type. There is, strictly speaking, no local

[5] Capper-Volstead Act of 1922.

[6] W. W. Fetrow, "Cooperative Marketing of Agricultural Products," Farm Credit Administration, *Bulletin No. 3*, 1936, pp. 2-3.

unit that has any voting power in the central organization. Membership is direct from the growers and not indirect through the locals. (See Figure 32.)

In this type of organization, services and administrative functions, including ownership and control of property, are performed by the central association. These associations differ from locals mainly in that they operate over wide areas and in that the services performed are usually more extensive than those which can be rendered by a local association. Some of these organizations cover an entire state; others, parts of several states.[7]

VOTING CONTROL OF A TYPICAL FEDERATED PURCHASING ASSOCIATION

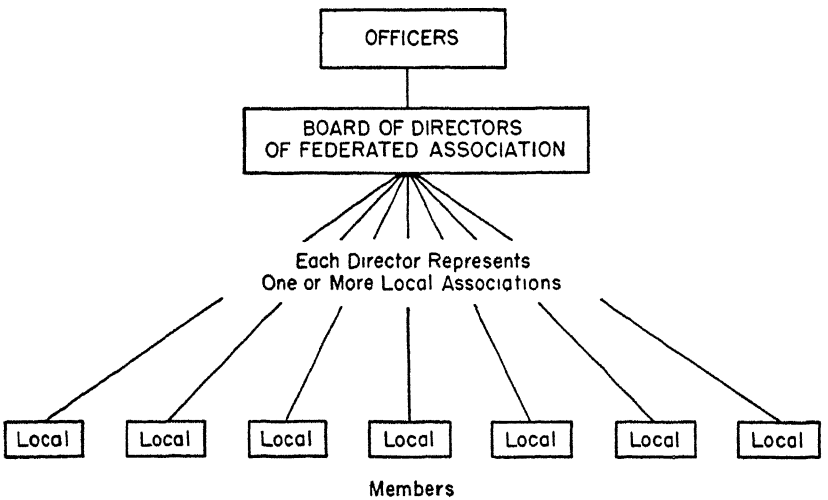


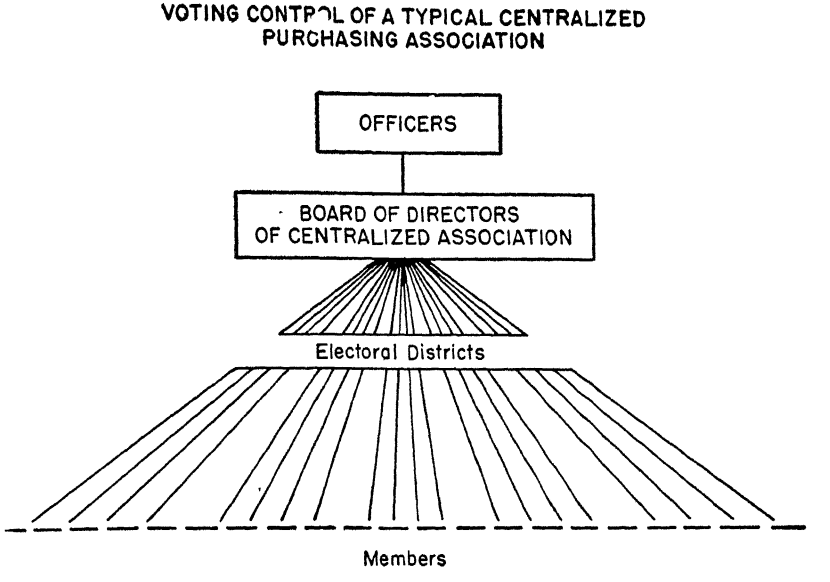
FIG. 31. A DIAGRAMMATIC PRESENTATION OF A FEDERATED COOPERATIVE ORGANIZATION. (Adapted from *Cooperative Purchasing of Farm Supplies*, Farm Credit Administration.)

Basic Principles of Cooperation

The modern cooperative movement may be traced to the efforts of a group of weavers in Rochdale, England, who have become known as the "Rochdale Pioneers."[8] They were interested in improving their economic status and hit upon the idea of cooperating with each other. First they pooled their annual

[7] *Ibid.*, p. 3.

[8] These weavers were not the first to use the cooperative form, but they were the founders of the cooperative movement.



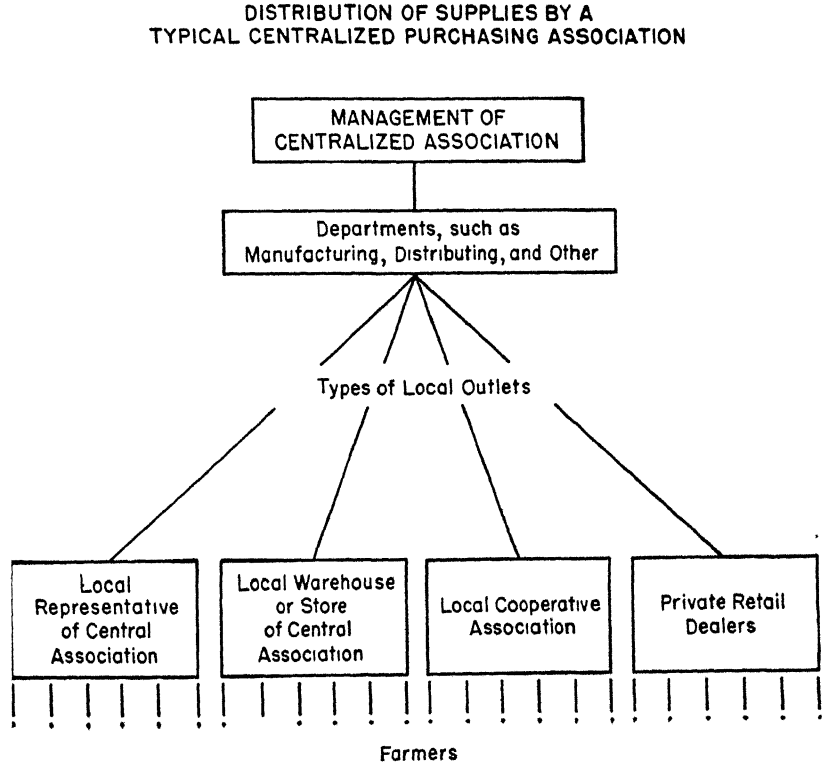

DISTRIBUTION OF SUPPLIES BY A TYPICAL CENTRALIZED PURCHASING ASSOCIATION
MANAGEMENT OF CENTRALIZED ASSOCIATION
Departments, such as Manufacturing, Distributing, and Other
Types of Local Outlets
Local Representative of Central Association
Local Warehouse or Store of Central Association
Local Cooperative Association
Private Retail Dealers
Farmers

FIG. 32. A DIAGRAMMATIC PRESENTATION OF A CENTRALIZED COOPERATIVE (Adapted from *Cooperative Purchasing of Farm Supplies*, Farm Credit Administration.)

savings of about $140 and with 28 members formed a consumer cooperative store. They opened this little shop on Toad Lane on December 21, 1844 and limited its use to its members. In the process of developing their ideas, they formulated certain fundamental principles that have continued to govern the organization and operation of cooperative associations to the present time. These principles of democratic control were expressed as one-member one-vote, limited interest on capital invested in the enterprise, and savings returned to members in proportion to their patronage.

1. Democratic control. To insure democratic control and to prevent what might be called "capitalistic" control, each member was given one vote irrespective of his patronage. In this manner the Rochdale Pioneers vested in their members the power to operate their own business and to formulate its policies. They believed that if the problems of the association should be subjected to open discussion this would educate the members as to the way in which the cooperative was being operated and also insure that the policies would be wisely determined.

Today the principle of one-man one-vote is the usual basis for voting. However, as has been said, 14 per cent of the associations use other bases, such as amount of patronage or stock held. This apparent discrepancy is equalized in the other provisions that will be discussed.

2. Limited interest on capital. Since common stock has limited voting power in most cooperatives, the limitation on interest is not a means of securing democratic control. Limitation of interest on invested capital is a recognition of the difference in motives between cooperatives and private business and the difference between profits for owners and savings for members. The reason why the Rochdale Pioneers limited the rate of interest was to make capital work for all of the members rather than for a few who might hold large amounts of common stock. If the interest rate on such stock were limited to a reasonable figure or kept as low as possible, this would leave more of the net operating margin for distribution to the members in the form of patronage dividends or in the form of accumulated reserves. Such accumulation would provide sufficient funds over a period of time so that the association could use its own capital and gradually retire the holdings of common stock.

Under such conditions, as the association accumulated capital, it could increase the amount available to its patrons as refunds by reducing the dividends payable on common stock.

3. Patronage refunds. The Rochdale Pioneers devised a method of distributing net earnings or net operating margins. The basis for this distribution was the amount of business done with the association or the "patronage" as it was called. This method was devised for the purpose of keeping each member keenly interested in the association. It was believed, and correctly, that this method would induce the member not only to patronize his association but also to participate in its operation and management.

The success of the Rochdale experiment has justified these basic principles. The organization, now called the "Cooperative Wholesale Society," has a membership of over six million persons. Its activities include the purchase, sale, and manufacture of a large number of commodities. It owns manufacturing plants and plantations in many parts of the world and its ships sail the seven seas.[9]

Conditions Necessary for Success

Conditions necessary for the success of a cooperative association usually include what is called an "economic need" or an economic opportunity for a cooperative to render an effective service to its members. In some cases success may be determined by the volume of business. For each type of cooperative there will be, as a rule, a minimum volume of business that must be done in order that the revenue will cover the variable and fixed costs. Since a cooperative must depend upon its members to use its services, *interest of the members* in the cooperative must be obtained if success is to be assured. That is, the members must be sufficiently interested in their association to use its services and to get others to do so. In not a few cases cooperatives have failed for lack of *capable management.* Finally, success may depend upon *adequate records*, properly kept and analyzed. These and other conditions will be briefly discussed.

1. Economic need or opportunity. An economic opportunity

[9] H. A. Bakken and M. A. Schaars, *Economics of Cooperative Marketing*, Table I p. 36. New York: McGraw-Hill Book Co., Inc., 1937.

for a cooperative may arise in several ways. Sometimes there are too many middlemen attempting to render a given service, such as marketing a specific commodity. Since the volume of each middleman may be too small for efficient operation, the service that he performs may be inadequate or mediocre in character. When this condition exists, a farmer-marketing cooperative may have an opportunity to obtain sufficient volume to operate efficiently. If the farmers who now use these middlemen should decide to market their own products, then the volume would be large enough to insure a revenue great enough

TABLE 25

REASONS REPORTED FOR DISCONTINUANCE OF FARM COOPERATIVES*

Reasons†	*Frequency*	*Per cent*
Difficulties in the field of management	2,234	19 8
Difficulties in the field of membership	2,220	19.7
Natural or unavoidable causes	1,231	10.9
Insufficient business for efficient operation	1,161	10.3
Financing and credit difficulties	1,079	9 6
Transportation problems	1,020	9 1
Opposition from competing enterprises	1,003	8.9
Declining prices	614	5.4
Consolidations and mergers	357	3.2
Technological changes	135	1.2
All others	218	1.9
Total	11,272	100 0

* Source "Farmers Cooperative Discontinuances," Farm Credit Administration, *Miscellaneous Report No 65*, 1943, p. 29

† Arranged according to frequency.

to cover all cost of operation and to yield a substantial margin of savings.

In some cases an economic opportunity may arise because marketing facilities at the local level are inadequate. Farmers, when faced with this problem, may form a cooperative that would have sufficient financial support to install such marketing facilities as are needed to render efficient service. These facilities may be in the form of auction platforms, storage space, washing and grading equipment, and other conveniences.

There may be need for a cooperative in those situations where competition in the buying of farmers' products is absent or, if

present, is quite imperfect. This is usually a difficult situation to cope with because the monopolist may pay higher prices for a short time and eliminate the cooperative from the market. Then the loyalty of the farmer-members is most necessary if they wish their association to succeed. They must sell through their own organization even at a temporary disadvantage; for, if they do not support it, it will fail. After the cooperative has been eliminated, the monopolist will lower prices he will pay and in the end perhaps conditions will be worse than originally.

2. Volume of business. The need for sufficient volume arises from the presence of fixed costs, such as rents on buildings, managers' salaries, office expenses, and warehouse upkeep. Such costs, when incurred, remain constant regardless of the volume of business. Then, there are costs that vary with volume, such as packages or containers, trucking, and extra hired labor. The gross income of a cooperative or of any other business organization must be great enough, at least, to cover both fixed and variable costs. A volume beyond this minimum will usually permit the introduction of certain economies that will reduce the variable costs per unit of product handled. Thus machines may be installed that will use labor more effectively (that is, use less labor per unit of product). Often the rate paid for services is less when more of the services are used. A good example of this is found in electricity, where the rate per kilowatt hour declines with the amount used. Often fuel, such as oil, may be purchased cheaper as the volume increases.

3. Interest of the members and the spirit of cooperation. A factor of major significance in the success of a cooperative is a keen interest that each member must take in his cooperative. He must also develop what is called the "spirit of cooperation," which means that each member must look upon cooperation as a way of life and not simply as a means of getting a higher price for his product or of making a saving on his purchases. One outstanding agency in this field, the Farm Credit Administration, states the case as follows:

> To be permanently successful, a cooperative must have the loyal and intelligent support of its membership. The producers of agricultural products are ordinarily so busy with their regular duties as to make it impractical for them to become expert in other lines of activity.

However, it is not unreasonable to expect that a sufficient number understand the cooperative program well enough to give intelligent direction to the operations of their own association. Often we find producers skeptical and slow to participate in the formation of a cooperative, but once they become members and enjoy a few seasons of favorable operation, they are willing to follow almost blindly the leadership of the manager and a few directors and neglect to remain posted as to what is taking place. Even directors sometimes fail to look behind the reports and recommendations of the management and other operating personnel and later wake up to learn that all is not well and that unsound practices have been followed which could have been avoided had the directors kept themselves fully informed [10]

4. A sound financial program. This same authority goes on to give sound advice with respect to the financial program of a cooperative, a defect in which has often been the cause of failure.

A sound financial structure is necessary for the success of any business institution. . . . In developing such a . . . structure it is well to bear in mind. . . . First, the services to be performed by the organization must be well understood and provision made for the adequate financing of these services. Second, the structure should be such as to provide for ample financing upon the assumption that the organization is to have continuous existence.

Raising money is sometimes regarded by members of a cooperative as the most important part of financing. It is important, but the use made of the capital is equally important. The wise use of money not only produces results but safeguards the investment. Heavy investments in equipment may be necessary for handling or processing certain products in preparing them for their journey to the ultimate consumer; the preparation of other products may require only plain buildings and simple equipment.

The financial program of the cooperative association necessarily needs to be adapted to the specific needs of the membership in accordance with their requirements and the characteristics of the industry being served.

In general, finances required by cooperative association should be so arranged as to meet the following needs: (1) fixed assets in the form of land, buildings, and equipment; (2) operating expenses such as salaries, taxes, insurance, and general operating costs; and (3) reserves to meet contingent liabilities and insure the maintenance of the organization upon a sound financial basis.[11]

[10] "Marketing Fruits and Vegetables Cooperatively," Farm Credit Administration, *Circular C-110*, August, 1938, pp. 42-43.

[11] *Ibid.*, pp. 43-44.

5. Capable management. Cooperation is rapidly acquiring the size and stature of "big business." Many associations have a volume running into millions of dollars. Organizations of this importance require management of high caliber, management that will compare with that of large private enterprises. To be successful, a manager must be familiar with the product handled, with the problems of the farmer members, with marketing outlets and methods, and with sources of farmers' supplies. He must also be familiar with general business methods, such as financing, taxation, and public relations. Such men can demand large salaries from private business, and cooperatives must compete with business in employing them. There is a definitely growing tendency to allow managers' salaries to grow with their ability to produce results.

6. Adequate records. Since cooperation is a manner of carrying on business, success or failure may depend upon the records and accounts, how they are kept and how they are used. Records are needed for several purposes. Since the savings are to be prorated to the members in proportion to their patronage, it is necessary to have an account with each member showing the physical volume of the products he has delivered, or the value of the supplies he has purchased. Accounts must be kept with all creditors for borrowed funds or for supplies bought on credit. In spite of popular misconception, cooperatives do pay taxes—sale taxes, property taxes, gasoline and license taxes, franchise taxes—in short, all taxes that any other business pays except capital stock and income taxes.[12] Records are needed if these taxes are to be calculated accurately. Detailed records provide the basis for calculating significant ratios, which aid the management in determining the "weak or soft spot" of his organization. Records are needed also as the basis for the annual reports to the membership by the manager and director. These reports are necessary if the members are to be kept up-to-date on the condition and progress of their cooperative (Tables 26 and 27). Such reports give the members confidence in their cooperative. The members, in turn, assist in making the cooperative a success.

[12] The operating margin of the cooperative is distributed to its members who pay the income taxes as individuals.

TABLE 26

BALANCE SHEET OF A FARMERS' MUTUAL ASSOCIATION

Assets			
Current assets:			
Cash		$ 5,888 20	
Accounts receivable	$51,756 37		
Less allowance for possible losses.	11,598.16	40,158 21	
Inventory feed supplies		59,129 24	
Total current assets			$105,175 65
Investment Columbia Bank for Cooperatives			6,800 00
Fixed assets:			
Land and buildings	53,223.64		
Less allowance for deprec	7,002.64	46,221 00	
Machinery and equipment	19,482 87		
Less allowance for deprec.	7,821.33	11,661.54	
Delivery equipment	8,801.04		
Less allowance for deprec	3,055 87	5,745.17	
Office furniture	1,229 35		
Less allowance for deprec	305 58	923 77	
Total fixed assets			64,551.48
Deferred charges:			
Prepaid insurance and taxes			1,745 58
Total assets			178,272 71
Liabilities			
Current Liabilities:			
Notes payable—Columbia Bank for Cooperatives		112,296 84	
Accounts payable		4,115 78	
Accrued items		1,075.54	
Income taxes withheld		502 85	
Total current liabilities			117,991 01
Fixed liabilities:			
Notes payable—Columbia Bank for Cooperatives			15,743.12
Total liabilities			133,734.13
Net Worth			
Revolving fund certificates		18,665.30	
Undistributed margins		25,873 28	
Total net worth			44,538.58

TABLE 27

OPERATING STATEMENT OF A FARMERS' MUTUAL EXCHANGE

Sales		$608,574.51
Cost of sales:		
Inventory, January 1	$ 61,476 23	
Purchases	537,175 55	
	598,651.78	
Less inventory, December 31	59,129 24	
		539,522 54
Gross margin on sales		69,051 97
Operating expenses:		
Salaries and wages	31,964.18	
Delivery expense	3,452.40	
Depreciation	5,214 61	
Other expenses	7,980 67	
Total expenses		48,611 86
Net margin for the period		$ 20,440 11

Factors Limiting and Favoring Cooperation[13]

Cooperation as a method of conducting a business has been subjected to violent criticism and exuberant praise. Those who have been most caustic in their condemnation have been those whose business interests have been adversely affected by cooperative activity, or they have been farmers who have lost heavily in some cooperative undertaking. For the most part, those who have been generous in their praise have been leaders and farmers associated with successful cooperatives. However, objective studies of cooperation as a means of solving the farmers' marketing problem indicate that there are certain well-defined advantages and equally well-defined disadvantages or limitations to this form of collective effort. The more important of these will be discussed briefly.

1. Limiting factors. The cooperative movement has been limited, as all mass movements have been, by human inertia. It is not an easy task, as reformers have experienced, to interest masses of people in any social or economic movement. Most people do not want to be disturbed. In addition to human inertia, the cooperative movement must deal with specific character-

[13] Based upon H. A. Bakken and M. A. Schaars, *Economics of Cooperative Marketing*, Chapter XX. New York: McGraw-Hill Book Co., Inc., 1937.

istics of population groups. Some groups are homogeneous or are composed of people of the same generic stock; they speak the same language and possess the same ideology. Whereas other groups are heterogeneous, or they are derived from several well-defined generic stocks; they do not speak a common language; nor have they a common ideology. Under such conditions the task of getting people to cooperate in any movement, even if it be one designed to improve their economic conditions, is always a difficult undertaking. The cooperative movement also encounters the opposition of private enterprise. Although cooperation is permissible under law, it is often considered by businessmen as unfair competition. The opposition to cooperatives will be most keen in those areas where the cooperatives' activities are in direct competition with those of private businessmen. Finally, there are other factors that limit the growth of cooperatives, such as the inability of people generally, and specifically cooperative patrons, to understand the issues involved in any controversy over cooperatives, cooperative policies, or internal operations of cooperatives. These are the limiting factors to which attention will now be directed.

a. Human inertia. One of the factors that has affected, and will undoubtedly continue to affect, the expansion of the cooperative movement is the inertia of large masses of people. Each cooperative is composed, as a rule, not of just a few people but of a large number of individuals, who are or should be active members. The success of a cooperative, therefore, is dependent upon the knowledge its members have not only of the organization and the operation of the cooperatives but also of the forces that affect its success, such as competition, prices and costs, governmental policies and programs, and national and international economic conditions. Since this is a basic requirement, the growth of the movement, as well as the success of a single association, is dependent upon a well-informed membership. But as a matter of experience, there is considerable inertia to be overcome in attaining any such goal. It may be possible, for a short time, to create enough enthusiasm among a group of producers to form a cooperative, but unless this enthusiasm can be supplemented with performance the association may fail. No sure-fire method has been devised as yet by which this inertia can be overcome. And until this is

accomplished, the cooperative movement and the success of any particular association will be limited.

b. Nature of population groups. The spread of the cooperative movement is definitely limited by such elements in the rural population as provincialism, consanguinity, and heterogeneity.

Farmers have been noted for their *provincialism,* which means the adherence to local ideas that differ from those of other segments of the population. It is not a question of whether or not these ideas are correct. The important thing is that they are different. When provincialism is strong, new ideas are not readily accepted, if at all. Since many farmers, especially in the United States, have been accustomed to marketing their products individually, it is often difficult to convince them that a new way may be more advantageous to them. Provincialism, although always present, should not be exaggerated. Most rural sections are no longer isolated. Improved highways, the telephone, and the radio have done much to liquidate or to modify previous fixed opinions. The expansion of rural education has had a marked effect on the extent to which farmers have been informed as to what the rest of the world is thinking and doing. Today farmers, as a class, are as well informed on state, national, or world affairs as urbanites. Yet it must be admitted that this is not always true; and, to the extent that a rural community is provincial, cooperation as a movement will not be welcomed with open arms.

Consanguinity is often a barrier to cooperation. A rural community may be so composed that everyone is related by marriage, or that certain families rule the community. When this is the case, family relations affect the way farmers will act. "How does Tom feel about this new idea" may be more important to a large family group than the thing itself. "If Tom says it's okay, it's okay by me" is often heard when a new proposal is made to a closely knit group.

Heterogeneity is a factor of great significance in some sections of the United States. In cases of this sort, the population is made up of several different races or nationalities. Each group has its own peculiar prejudicies, customs, traditions, and, in some cases, languages that it is not willing to relinquish for a common purpose. In the South, the presence of the Negro is a case in point. It is difficult to get white farmers to admit

Negroes to membership in a cooperative association or, if this is permitted, to allow a Negro to be a member of a board of directors. It is for these reasons that cooperation will be limited in its scope in areas where the population lacks homogeneity or uniformity.

c. Competition. Cooperative associations are seldom, if ever, free from the competition of private business enterprises. This gives the cooperative the responsibility for using good business methods. A high quality of performance is necessary for the survival of the association. There is nothing inherent in the cooperative method that will cause it to succeed in spite of careless management. Members will become dissatisfied and discouraged and may return to the more efficient private concern. When this occurs, the failure of the cooperative is almost certain. On the other hand, competition may result in the taking over by the cooperative of the business of the private concern. This can occur only when the private business is badly managed or when the spirit of cooperation has developed to such an extent that producers will adhere to their association through adverse conditions, determined to correct or overcome all difficulties. There are many instances of success resulting from this attitude.

d. Some other factors. There are other forces that tend to limit the growth of cooperatives. Among the most important of these is the inability of the members to understand what the issues are and to comprehend their importance. When this is a factor, the cooperative may be operated badly or may be unable to maintain membership. Members, because of their ignorance, may make unreasonable demands upon their cooperative. They may insist that the cooperative pay larger dividends when the wise policy would be to reserve a part of the net operating revenue to increase plant facilities or to provide additional services for its members.

Occasionally cooperatives forget or consciously depart from cooperative principles in the conduct of their business. They succumb to the temptation to conduct their operations in the same way and for the same purposes as a private business. Such a departure may appear at times desirable or even necessary, but in the end it means that the cooperative way has been abandoned.

2. Favorable factors. Although the factors limiting the cooperative movement are real and of great significance, there are forces that are operating to expand rather than to limit the growth of the cooperative way of doing business. First, not only has cooperation been successful but the movement has grown rapidly in recent years. There is, therefore, a *dynamic power* that is generated by success. Second, accompanying this success, and one reason for it, is an expert knowledge of what it takes to organize and operate a successful cooperative. It is the "know how" of cooperative organization and operation. Third, over the years, cooperatives have had to fight for legal and public recognition. This has been achieved. These three factors are of such importance that they deserve more than passing mention.

a. Growth of the cooperative movement. The cooperative movement in this country was started largely by farmer organizations. As Bakken and Schaars state:

> The general farm organizations, such as the Grange, Farmers Union, Farm Bureau Federation, and the Equity, have started many marketing associations and have nurtured many an association through its trying initial period. Low farm prices, wide marketing margins, and excessive freight rates were among the most direct reasons for starting associations in many parts of the country.
>
> Although some associations were started shortly after 1800, no significant growth of local associations took place until the last quarter of the past century. From 1895 to 1920 a gradual expansion in numbers of associations, membership, and volume of business took place This period was followed by a decade of rapid expansion when large-scale sales associations appeared, enabling acts were passed, propagandists were active, and federal and state divisions of cooperative marketing were organized.[14]

The economic conditions that prevailed following World War I were such as to stimulate the formation of cooperatives, and a pronounced development took place during the decade from 1920 to 1930. The winter wheat regional pools were organized during this period and reached their peak in 1924-25. Reference to Figure 33 reveals that the total amount of business and the number of members have been significantly increasing, whereas the number of associations is slowly but steadily declin-

[14] By permission from *Economics of Cooperative Marketing* by H. A. Bakken and M. A. Schaars, copyrighted, 1937, by McGraw-Hill Book Co., Inc.

ing. The result is, of course, larger and stronger associations.

b. Expert knowledge. It is difficult to ascertain the influence of this factor on the growth of cooperatives. During the struggle for a place in our economic system, much has been learned about the technique of organization and operation. This has been accomplished by the movement itself, assisted by the land grant colleges and other agencies that have made objective studies of the movement in general and of many specific phases.

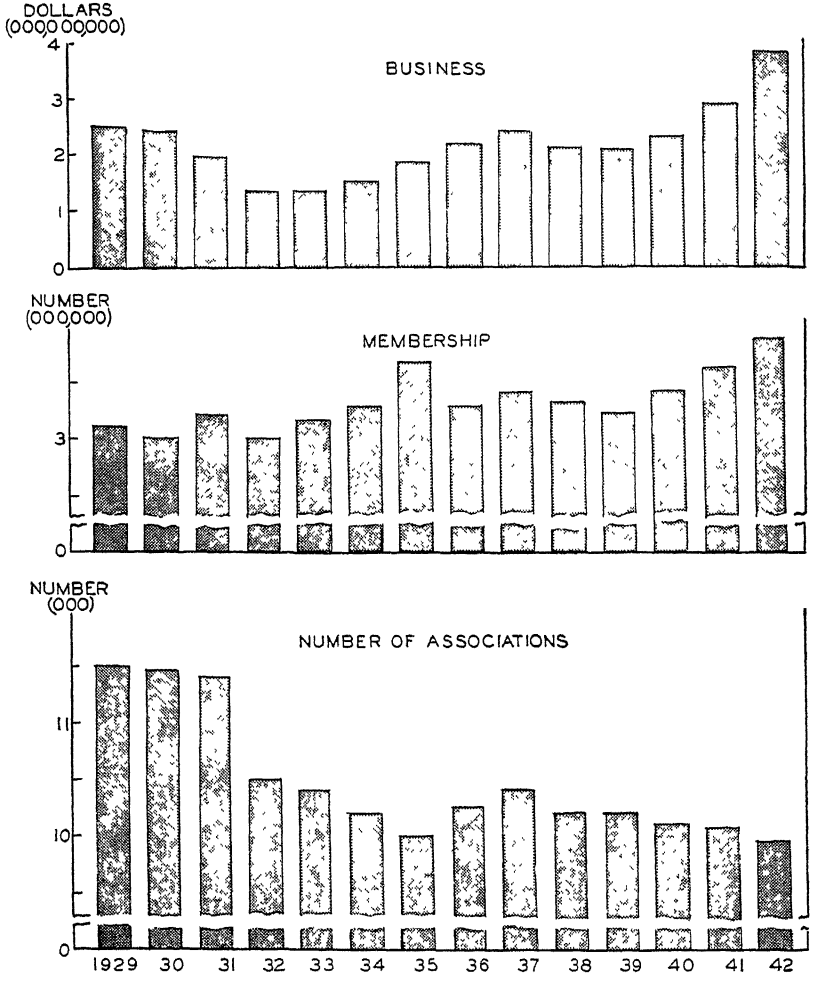


FIG. 33. GROWTH OF FARMERS' MARKETING AND PURCHASING COOPERATIVE ASSOCIATIONS. (Farm Credit Administration, *Miscellaneous Report No. 70*, January, 1944.)

Prominent among these is the Farm Credit Administration, which has added a Division of Cooperation to its other services. This Division has issued a number of useful bulletins and it publishes a periodical, *News for Farmer Cooperatives*. Out of such studies and services have come workable principles of organization and operation.[15] Furthermore, the movement has acquired cohesiveness through the coordinated efforts of councils that were designed to keep cooperators informed of operational problems and their solution. To supplement and assist these councils, there was created in 1925 an independent agency, the American Institute of Cooperation. The Institute is concerned chiefly in encouraging objective studies of cooperatives, the development of ways and means by which cooperatives can perform their function in a more efficient manner, and the carrying on of a constant or sustained program of education.[16]

c. Recognition. Circumstances have compelled cooperatives to conduct a campaign for recognition, on both the public relations and the legal fronts.

When cooperation came to the attention of the people as a means of conducting business, it was looked on with suspicion. This was due largely to the traditional method of doing business by individual private enterprise. Cooperation was thought to be more than slightly tinged with socialism. Nevertheless, farmers became so concerned over their economic and social status that they were willing to listen to almost any plan that promised them a better way of life. One such way was to join together under the banner of cooperation. Gradually, and after much experimentation and failure, cooperation has been accepted by the public as a method by which farmers can obtain a higher standard of well-being.

On the legal front the struggle was more intense. Businessmen, anxious to preserve their position, caused many suits at law to be brought against the "co-ops." This is not the place to recount the legal skirmishes; they are only important as history. But it will be well to outline the two laws that clarified and defined the legal position of cooperatives. The Clayton

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[15] R. B. Corbett, "Institute School for Cooperators," *American Cooperation*, p 103. Washington, D C : American Institute of Cooperation, 1941.

[16] *American Cooperation* Washington, D. C.: American Institute of Cooperation, 1925

amendment of the Sherman Anti-Trust Act, passed in 1914, exempted from the operation of the Sherman Act, labor and agricultural organizations organized for mutual help, "and not having capital stock or conducted for profit." It will be seen that capital stock associations were left in an indefinite state.

The Capper-Volstead Act of 1922 was more specific in that it definitely authorized the formation of marketing associations of agricultural producers. The Act has several important provisions. (*a*) Each member is allowed one vote, or, if voting is on a stock basis, dividends on stock may not exceed 8 per cent; (*b*) nonmember business must not exceed member business; (*c*) associations are restricted to agricultural producers; (*d*) only marketing associations are included in the Act. It is clear that this Act contributed greatly to the clearing up of the legal status of cooperatives.

In addition to Federal laws, cooperatives have the protection of state laws. Practically every state in the Union has a law or laws that prescribe how cooperatives may be organized and operated. It has come about that today cooperatives are recognized as a part of our private enterprise system, and they have gained a legal status that permits them to do business along with other types of business organizations.

Questions

1. Why were cooperative marketing and purchasing developed?
2. How do cooperatives differ from private corporations?
3. Describe briefly the various forms of organization used by cooperatives.
4. What are the "basic" principles of cooperatives?
5. What are the conditions that are required for the successful operation of a cooperative?
6. What are the factors (*a*) limiting the growth of the cooperative movement and (*b*) favoring the growth of the movement?
7. Specifically, how has the cooperative movement been recognized?

References

Bakken, H. A., and Schaars, M. A., *Economics of Cooperative Marketing*, Chapter XX. New York: McGraw-Hill Book Co., Inc., 1937.

Converse, Paul D., and Huegy, Harvey W., *Elements of Marketing*, Chapter 19. New York: Prentice-Hall, Inc., 1947.

Corbett, R. B., *Institute School for Cooperators. American Cooperation.* Washington, D. C.: American Institute of Cooperation, 1941.

Farm Credit Administration, *Circular C-110*, August 1938, "Marketing Fruits and Vegetables Cooperatively."

Fetrow, W. W., "Cooperative Marketing of Agricultural Products," Farm Credit Administration, *Bulletin No. 3*, 1936.

CHAPTER 17

Cooperation in Action

IN THE PREVIOUS CHAPTER the cooperative movement, with emphasis on its historical and theoretical aspects, was described. How well the benefits of cooperation are being realized, how widely the plan is being accepted, and how rapidly its use is being adopted are questions under consideration in the present chapter. Surveys of cooperative efforts show an amazing variety of farm products marketed and of farm supplies purchased through the use of the cooperative plan in all sections of the nation. The most typical of these surveys have been condensed to form the present chapter.

California Fruit Growers Exchange[1]

The Exchange, organized in 1893, is the largest fruit marketing agency in the United States and one of the oldest agencies of its kind. In 1948, the Exchange ended its fifty-fifth year with approximately 15,000 California and Arizona citrus growers cooperating in the marketing of their fruit.

The Exchange is a federated organization. The local units are formed into district exchanges, which are members of the California Fruit Growers Exchange. Headquarters are located in the Sunkist Building, owned by the organization, in Los Angeles, California.

The Exchange handles both fresh and processed oranges, lemons, and grapefruit. In addition to efficient handling of fruit, the Exchange carries on advertising campaigns, purchases orchard and packinghouse supplies for its members, and maintains a laboratory and a field inspection service.

Of the total 105,829 standard cars of oranges, lemons, and grapefruit shipped by the California-Arizona Citrus Industry

[1] "Annual Report of Your Business for 1948," California Fruit Growers Exchange, Year ended October 31, 1948, Fogelberg and McKay, "The Citrus Industry and the California Fruit Growers Exchange," Farm Credit Administration, *Circular C-121*, 1940.

during the 1947-48 fiscal year, 78,466 cars were shipped by the Exchange. In addition to the fresh fruit shipments, 27,800 cars of Exchange fruit were used in the manufacture of citrus products.

Florida Citrus Exchange[2]

The Florida Citrus Exchange, located in Tampa, Florida, is a federated cooperative marketing organization acting as sole sales agent for forty or more local cooperative associations of growers and affiliated shippers. The cooperatives are grouped into sub-exchanges and associate sub-exchanges. Any association with a volume of 400,000 boxes or more may form a special sub-exchange and elect a representative to the Board of Directors. The charter under which the Exchange operates was granted July 20, 1909.

The chief commodities handled by the Exchange are both fresh and processed oranges, tangerines, and grapefruit. Besides its selling services, the organization helps with the membership problems, oversees grading, studies markets, routes fruits to the most favorable markets, and furnishes supplies at cost.

The Exchange handles the sales of about 5,000 grove properties. For the year 1947-48, the Florida citrus crop was 90 million boxes of citrus fruits. The Exchange handled 25 to 30 per cent of this amount.

Union Equity Cooperative Exchange[3]

In May 1926, the Union Equity Exchange was organized and incorporated under the Warehouse and Marketing Laws of Texas with an authorized capital of five million dollars. On June 11 of that year the office was opened in Enid, Oklahoma. In June 1929 the Union Equity Exchange and the Farmers Cooperative Grain Dealers Association of Oklahoma were combined. In October of the same year the Union Equity Cooperative Exchange was incorporated under the laws of the State of Oklahoma.

[2] "Annual Report of the Florida Citrus Exchange, 1947-48," Florida Citrus Exchange; E B. Reid, "Farmer Co-ops in Florida," Columbia Bank for Cooperatives, March, 1940.

[3] "History and By-Laws of the Union Equity Cooperative Exchange, 1926-1948"; "Statement of Business from the Exchange," April 30, 1949; M. C. Puhr, "Farmer Co-ops in Oklahoma," Wichita Bank for Cooperatives, September, 1939.

The Exchange, a large federated regional marketing agency, markets grains for its members. It operates for the mutual benefit of its members. In 1948 there were 85 farmer-owned cooperative elevators and equities, operating 130 elevators, owning stock in the Exchange. Twenty thousand farmers owned a terminal elevator at Enid with a capacity of 18,500,000 bushels at a cost of approximately $4,000,000. No one individual farmer owns more than $200 capital stock and $100 Allocated Reserve.

As shown by the operating statement for the year 1947-48, the total sales amounted to more than $76,000,000. The total receipt of grain expressed in bushels was more than 30,000,000. The grain is consigned to the Exchange, and the Exchange sells it at terminal markets.

Illinois Livestock Marketing Association[4]

This association, with headquarters in Decatur, Illinois, was first chartered in 1931, but it was reorganized in 1940.

There are two distinct types of operating units: (1) The County Marketing Association, duly incorporated and locally owned and controlled by a board of directors, whose function it is to assemble livestock—by purchase or through consignment—for distribution, and (2) The State Association, owned and controlled by the county organizations, whose primary purpose is to dispose of the livestock through sale or through shipment to the terminal markets.

The Association is tied into the Illinois State Farm Bureau. The policy is to maintain membership in the county associations. The basis of membership is the Farm Bureau. That is, a member of the Farm Bureau is *ipso facto* a member of the Association. There were in 1948 sixteen local marketing associations holding membership in the Illinois Livestock Marketing Association.

The Association markets hogs, cattle, calves, and sheep. For the fiscal year ending September 30, 1948 the Association marketed 478,283 head of livestock, weighing 120,547,965 pounds, and valued at more than $29,000,000. In addition to the livestock marketed through the Illinois Livestock, member associa-

[4] "Report from the Illinois Livestock Marketing Association," May 11, 1949.

tions shipped 6,947 cattle, 3,188 calves, 9,129 hogs, and 8,694 sheep to the producer agencies on the terminal markets. Also local managers sold to locker plants or to producers for further feeding or breeding 2,229 cattle, 815 calves, 12,392 hogs, and 966 sheep. The number of all animals handled by the combined units totaled 522,643 head.

Challenge Cream and Butter Association[5]

Challenge, the oldest and second largest regional sales agency in the United States marketing dairy products cooperatively, has its headquarters in Los Angeles, California.

In November 1909, a group of dairy farmers in Tulare County, California, organized the Dairyman's Cooperative Creamery. In September 1910, as a result of unfavorable price changes and overloaded storage conditions, dealers claimed that its butter was no longer "Extras" and refused to take any more of it. The Riverdale Cooperative Creamery in Fresno County was also having difficulties. The two creameries decided to join forces in marketing butter directly to retailers in the Los Angeles Market. This marketing program was begun in January of 1911, under the name of Challenge Cream and Butter Company. In January of 1917 the Danish Creamery Association of Fresno was admitted to membership. The name of the cooperative was changed then to the Challenge Cream and Butter Association.

The Challenge is a federation, composed of 37 local units in the states of California, Idaho, Colorado, Wyoming, Oregon, Utah, Washington, and Nevada. There are two sales branches, one in Los Angeles and the other in San Francisco, and eight other distributing depots. More than 33,000 dairymen benefit from the use of Challenge.

The large-scale operations require relatively large investments in distributing plants and in delivery equipment. The fixed assets in 1948 were valued at about $6,000,000 with a depreciation value of $2,000,000. Supplies were valued at more than $3,000,000.

[5] Paul E. Brintus, "Operating Methods of Challenge Cream and Butter Association," Farm Credit Administration, *Circular C-119*, May, 1940; "History of The Challenge Cream and Butter Association, 1941"; "Balance Sheet of the Association," December 31, 1948.

Land O'Lakes Creameries, Incorporated[6]

Land O'Lakes is a federation made up of local cooperative creameries in Minnesota and northwestern Wisconsin. The organization has 430 cooperative creameries with a total membership of about 100,000. The headquarters are in Minneapolis, Minnesota.

In the production of milk, Wisconsin leads the nation, with Minnesota second. In 1947 the volume of milk produced in those two states was 15,396 and 8,415 million pounds respectively. A relatively small proportion of the output is consumed as fluid milk. Most of it is shopped out as butter, cheese, and evaporated or condensed milk.

In 1948 the "Creameries" handled the largest volume of business in the history of the organization. Expressed in money value, it was $103,000,000. The members have an equity in the association of more than $12,000,000.

The chief function of the Land O'Lakes is selling for its members, but it has always worked for improvement in the quality of the butter it handles. All butter is carefully scored, and the score is found in every package sold. The Land O'Lakes brand is a guarantee of quality and uniformity.

Washington Cooperative Egg and Poultry Association[7]

This association, with headquarters in Seattle, Washington, is a classic example of growth from small beginnings. It was organized in 1917, but for three years it merely assembled and graded eggs for its members and sold them through commission men. At the end of this test period, the association decided to conduct its own sales. Its first authorized capital was $2,000, of which $473 was paid in by 114 members in the first year. In 1948, the association had a membership composed of 30,445 farm families. The members' equity was $10,624,000.

This is a centralized marketing and purchasing cooperative.

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[6] Florence C. Bell, "Farmer Co-ops in Wisconsin," St. Paul Bank for Cooperatives, March, 1941; "The Dairy Situation," January, 1949; "Land O'Lakes Creameries Balance Sheet," December 31, 1948

[7] M. C. Puhr, "Farmer Co-ops in Washington," Spokane Bank for Cooperatives, September, 1940, "Washcoegg," 32nd Anniversary Number, Vol 26, No. 10 (March, 1949).

The branches are mere assembling points and not independent units. A Board of sixteen trustees, elected for a term of three years, determines the management policy and business affairs of the association. Fifteen of these trustees must be active farmer-producers, elected by ballot vote of the members in the district each represents. One trustee is appointed by the State Director of Agriculture. The Board of Trustees appoint a general manager, who is responsible to the Board for the operation of the association.

Through their cooperative, members market eggs and poultry and purchase feeds, seeds, fertilizers, and other farm production supplies. In addition to its regular marketing and purchasing activities, the association maintains an Egg Meats Department. In this department the weak, misshapen, or cracked eggs are broken, and the egg content is frozen to make a wide variety of products available to bakeries and to similar industries.

During 1948, the total sales value of all products marketed by the association for its members was $42,900,000. Patronage returns to members amounted to more than $2,000,000.

Ohio Wool Growers Cooperative Association[8]

The first wool growers organization in America, the Ohio Wool Growers Association, was formed in Ohio in 1859. This organization, the forerunner of the Ohio Wool Growers Cooperative Association, continued in operation for more than fifty years.

On May 25, 1918 the Ohio Sheep and Wool Growers Association Company was organized at Columbus, Ohio, by sixteen men, representing six Ohio counties. On October 28, 1924 this company, under Ohio's cooperative marketing laws, was changed to the Ohio Wool Growers Cooperative Association.

This is a nonstock membership type of organization. Any person producing wool in Ohio is eligible to become a member of the Ohio Wool Growers and to consign his wool.

The Association has for its primary purpose wool marketing; however, it engages in other activities important to growers. Its educational program has helped to bring about better prep-

[8] R. C. Dorsey, "Farmer Co-ops in Ohio, 1940," Louisville Bank for Cooperatives; Letter and Leaflet sent by the Association, dated May 6, 1949.

aration of wool for market, a more complete knowledge of the grades of wool, a more efficient control of parasites, and proper methods of flock feeding and management.

Since 1918 the Association has marketed cooperatively more than 105,000,000 pounds of wool. The total savings to growers have been more than $2,600,000. During 1948 approximately 2,400,000 pounds of wool were marketed.

Ohio Farm Bureau Cooperative Association[9]

This association has grown out of the State Farm Bureau Movement. In 1914, Ohio farmers began organizing voluntary groups to assist county agents in their demonstration work. These groups were known as "county farm bureaus." In 1919 the county bureaus formed a state-wide council called the Ohio Farm Bureau Federation. In 1935 this was incorporated separately as the Ohio Farm Bureau Cooperative Association. Each of the county farm bureaus also is incorporated separately and is owned and controlled by its local members.

The Bureau is a federated type of organization with its head office in Columbus, Ohio. From this office are supervised the farm supply plants, the wholesale buying concessions, and marketing, accounting, and educational services.

The Association deals in feeds, seeds, fertilizers, farm machinery, gasoline, grains, and other miscellaneous items. It has been behind the movement for "open formula" fertilizers. In 1938 it joined with the Cooperative Grange League Federation of New York State and bought a large superphosphate plant in Baltimore. Also, the Bureau has equipped a plant at Alliance, Ohio, to mix fertilizers from the Baltimore plant.

The association has outlets—cooperative stores—in all except three of the Ohio counties and many branch outlets in each county trading center. It has an over-all total of 210 service locations. The system serves more than 100,000 members and patrons.

Expressed in dollars, the total volume of business in 1948 was $56,000,000. In ten years the Bureau multiplied its yearly volume by eight. The savings to its members amounted to $1,443,000 in 1948 as compared to $120,000 in 1938.

[9] R. C. Dorsey, "Farmer Co-ops in Ohio, 1940," Louisville Bank for Cooperatives; Annual Financial Report as of December 31, 1948.

Southern States Cooperative, Incorporated[10]

From a small beginning, Southern States Cooperative in Richmond, Virginia, has grown to one of the nation's leading farmers' purchasing and marketing organizations. It was organized in 1923 as the Virginia Seed Service. This organization was composed of a small group of Virginia farmers, who joined together for the purpose of buying seed adapted to the land and climate of the state. By 1933 it had expanded so as to include Maryland, Delaware, West Virginia, Kentucky, and northeastern Tennessee. It was in this same year that the name was changed to Southern States Cooperative.

This is a combination of federated and centralized organizations. In 1948 it served 228,000 patron owners—farmers who own stock in the Cooperative. It conducts business through more than 700 local cooperative service agencies.

For its members Southern States purchases seeds, feeds, fertilizers, and other farm supplies and markets poultry, eggs, grains, and other farm products. It has always maintained the policy of "open formula" for its products. To this end, in 1933 it began to acquire facilities for producing feeds and fertilizers. Feed mills are owned in Baltimore, Norfolk, and Roanoke. It joined with the Farmers' Cooperative Exchange in 1939 to finance a cooperative feed mill in Statesville, North Carolina. It owns a fertilizer plant in Baltimore and another in Norfolk. From time to time Southern States has added to its list of supplies binder twine, spray materials, wire fence, roofing, small tools, implements, paint, and petroleum products.

During the fiscal year ending June 30, 1948, the total volume of business, including the business of those cooperatives affiliated with Southern States, aggregated $112,000,000. This sum represents an increase of 35 per cent over the preceding year.

It is obvious from the foregoing descriptions of various cooperative organizations that important changes are taking place in the field of farmers' cooperation. The operations of individual units are expanding in volume and are becoming forces with which to reckon in their influence on our economic life.

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[10] John H. Lister and Alex Swartz, "Purchasing Farm Supplies through Southern States Cooperative, Incorporated," Farm Credit Administration, *Circular C-128*, 1943; Southern States 25th Annual Report, June 30, 1948.

Not only are these organizations increasing in size, but many are expanding in the variety of their services. They have grown beyond mere marketing and are now engaged in processing and manufacturing. Feeds and fertilizers are now being mixed and packaged in cooperatively owned plants. Petroleum products are being distributed, and lubricating oil is being blended under cooperative brand names. Farm machinery and poultry equipment are manufactured and distributed through wholesale and retail channels. The savings realized by these plants are passed along to the ultimate farmer member, and benefits amount to many hundred thousand dollars annually.

Questions

1. Name some of the important cooperatives operating in the United States.
2. Make a list of the conditions that activated the formation of these cooperatives
3. What services do cooperatives, listed in this chapter, render the producers?
4. How many of these cooperatives are centralized? How many federated?
5. In your opinion, how are the cooperatives affecting the nature of our economy?

References

There are no formal publications dealing with cooperatives in action. The student may wish to refer to specific sources as given in footnotes to this chapter.

PART IV—AGRICULTURAL FINANCE AND INSURANCE

Nature and Use of Farm Credit

Federal Farm Credit System

Private Sources of Farm Credit

Farm Insurance

CHAPTER 18

Nature and Use of Farm Credit

MOST FARMERS use credit in the conduct of their business affairs. They use credit when they buy farm supplies on time from their favorite supply merchant. When purchasing farm machinery or livestock, farmers often pay a part of the purchase price in cash and the balance at some future time. Not infrequently, farmers will go into debt for the purchase of their farms. It is obvious that credit is a very useful thing in the conduct of a business. Credit, however, is a sharp tool that must be used with care. The use of too little credit may reduce a farmer's productiveness, whereas its too free use may create a heavy interest burden. In this chapter the nature of credit and how it should be used will be considered.

The Meaning of Credit

The word "credit" means the power that a person possesses to acquire goods or services without the immediate expenditure of money. Not all persons possess this power. It is not always possible for a farmer to buy on time. Merchants may require a farmer to pay cash for goods because the merchant feels that the farmer is a poor risk. What he means is that the farmer does not possess the power to use credit.

The power to use credit may be obtained in a number of ways. It is often said that confidence is the basis of credit. This means that the lender believes that the debtor will return the goods, services, or their equivalent in money when the debt is due. The willingness of the debtor to pay his debt is not, however, the sole basis of credit. He must also have the power to pay. This power to pay may be expressed in terms of the debtor's possessions of valuable assets and the ease with which those assets can be converted into cash.

It often occurs that a creditor requires that assets be transferred to him as security. When this is done, a *mortgage* or

some other credit instrument is given, which means that the creditor has the privilege of selling the assets if the debt is not paid in accordance with the terms of the debt agreement.

In those cases in which the borrower does not possess power to pay in the form of assets, the creditor may require that others who do possess the power to pay enter into a joint agreement with the debtor to pay the debt. Such an agreement is made when the debtor and others sign a "promissory note."[1] When the note is signed, it is possible for the creditor to collect the debt with interest from any one or all co-signers of the note.

A not uncommon basis of credit is agricultural paper, such as warehouse receipts. These are issued when a farmer stores his product in a bonded warehouse. If the farmer is in need of cash immediately, he may take these receipts to a commercial bank, which will extend bank credit for a portion of the face value of the receipts. When the farmer pays his debt to the bank, the receipts are returned to him and he may then sell his product. In the event that the farmer does not pay his loan, the bank may sell the receipts or the product, whichever is convenient. Any funds collected in this way over and above the debt and the cost of collection are returned to the farmer.

The Farmers' Need for Credit

The farmers' need for credit began to take definite form with the passing of the frontier and the emergence of commercial agriculture. It must be recognized, however, that farmers, especially large planters of the South, had critical credit problems in the colonial period and in the pre-Civil War days. Nevertheless, the farmers' credit problem did not become important enough to claim attention until comparatively recent times. The reasons for this may be briefly enumerated.

1. Farm machinery. Under pioneer conditions land, not capital, was the chief factor of production. Such capital as was employed consisted of hand tools, crude buildings, and livestock. But as the free land began to disappear about 1890, capital as a productive factor began to be used more widely. After the turn of the century, the use of capital was greatly expanded.

[1] A promissory note is a written agreement to pay a specified sum at a specified time in the future. It may or may not carry interest, but it must be given for a "valuable consideration" Such a note is also used for loans supported only by the credit reputation of the buyer.

The old hand tools and horse-drawn machines began to give way to self-propelled machines. As new types of machines became available, the expenditures for machinery and tools increased.

2. Commercial fertilizer. It was not only for the purchase of more and better machinery that farmers needed credit. With each attempt to make the limited land produce more, commercial fertilizers were needed in increasing quantities. Historically, Peruvian guano was first used in 1824. This natural fertilizer, however, was supplemented in 1830 by the importation and use of nitrate of soda from Chile. Domestic production of mixed fertilizer began about 1850, and several years later superphosphate was added to the list of plant nutrients.

In spite of the value of these products, the use of commercial fertilizer was at first quite limited. (In 1856 it was reported that only 20,000 tons were used on the farms of the United States.) Although no accurate data are available, it is probably true that the use of commercial fertilizer did not increase until the closing decades of the 19th century. At any rate, only 1,150,000 tons were reported as used in 1880. Today, however, over 8,000,000 tons are used annually.

3. Livestock. With the expansion of commercial farming the production of livestock and livestock products has increased at an amazing rate. The purchase of feeder cattle requires millions of dollars annually; and the feeding of these, millions more. The establishment and maintenance of dairy herds for an individual farm often require the expenditure of large sums. These and other operations associated with livestock require, as a rule, much more money currently than the farmers have available. To supplement his own funds, he must resort to the use of credit.

4. Land and buildings. As the output of farms has been expanded, more has been expended on farm buildings. Farmers not only have demanded better homes in which to live and rear their families but also have built many modern farm buildings needed to house their livestock and store their crops. In not a few instances, these structures have been expensive and have required the free use of credit.

A need for credit also arises in connection with the sale and transfer of farms. As a rule, a part of the purchase price of

such farms is obtained by the use of mortgage credit. Farms frequently form parts of inherited estates. If one of the heirs of such an estate wishes to own and operate the farm, it will be necessary for him to buy out the other heirs, a procedure that will likely involve the use of mortgage credit. Or if none of the heirs wishes to own the farm, it will be sold, the buyer using credit for the purchase.

The Cost of Credit

Since farming is a business conducted for profit, the cost of credit is an important factor determining its use. But the real cost of credit is not always shown in the interest rate specified in the loan contract; in other words, the contract rate is not always the effective rate, and it is the effective rate that must be used in cost calculations. Since this is an important matter, several of the factors affecting the cost of credit will now be discussed.

1. Interest and fees. The cost of credit consists of interest and charges incurred in the making of a loan. Interest is a charge made for the use of capital but is usually thought of as a payment for the use of money. For the purpose of this discussion the difference in these concepts is not significant. It should be borne in mind, however, that, in an economic sense, money as such is not borrowed; or to state this in another way, interest is seldom paid for the use of money but for what money can buy in goods or services. In addition to interest, there are usually other charges that affect the cost of a loan, such as flat fees made to cover the clerical and office expenses involved in making out the proper legal forms, the cost of searching records for the purpose of determining whether the security offered is free from incumbrances, and the cost of recording the credit instruments, such as mortgages, on the books of the county clerk.

The way in which these charges affect the cost of a loan is sufficiently important to merit some discussion. Suppose that a farmer wants to borrow $500 to be repaid one year after the loan is made. If the rate of interest is 6 per cent and the fee for search and recording and for forms used is $5, the total cost would be $35 ($30 for interest and $5 for fees) for a $500 loan, or a cost of $7 per $100.

There is a concealed cost when the interest charge is deducted

at the time the loan is made. Suppose this is done in the case of a $500 loan made for one year. In this case the farmer would not get $500 but $470 ($500 − $30 interest = $470). This means that the farmer pays $30 not for the use of $500 but for $470. Hence the interest charge is not 6 per cent but 6.38 per cent ($30 × 100/$470 = 6.38 per cent).

2. Method of repayment. Not only is the cost affected by the charges but also by the method of repayment. In the illustration used, it was assumed that the debt would be repaid at the end of the year. But this method of repayment is not always used. The creditor may require that the loan for a year be repaid on a monthly basis. When this method is followed, the effective cost of the loan is greatly increased. This may be illustrated as follows: Suppose that, in the case of a $500 loan at 6 per cent, the creditor requires that the principal be repaid on a monthly basis. This means that instead of having the use of $500 for a full year, the farmer has the use of only $500 for 6 months, or $250 for the full year. In this case, the interest rate would not be 6 per cent but 12 per cent ($30 × 100/$250 = 12 per cent).

3. Size of the loan. In all loans that involve a fixed or flat charge and a constant interest rate, the dollar cost of the loan will decline as the size of the loan increases. This fact may be demonstrated by assuming an interest rate of 6 per cent and a flat charge of $5 on each loan irrespective of its size. Suppose that a farmer makes a loan of $1,000. The interest will be $60 and the flat charges, $5, a total of $65 or $6.50 per $100. If the loan, however, is for only $100, the interest will be $6 and the flat charge $5, a total of $11. It thus happens that the small farmer whose loans are usually small is at a disadvantage in the credit market.

Principles Involved in the Use of Credit

Credit may be used more wisely if certain principles are observed and followed rigidly. There are four of these principles, each of which will be stated and discussed briefly.

1. Productive needs. The first principle is that credit should be used only for those purposes that will insure sufficient added returns to repay the loan. This means that all loans must be paid out of income; and, unless there is sufficient income, the

debt cannot be paid. Suppose, for example, a farmer is about to borrow $500 to buy fertilizer and the cost of the loan is $550, including the principal of $500 and interest and other costs of $50. Before such a loan is consummated, the farmer ought to be sure, from such information as is available to him or from past experience, that added production obtained by the use of this fertilizer will be sufficient at least to pay the loan and its cost.

In an estimate of this sort, some allowance should be made for certain risks. Weather conditions, for example, markedly affect production. Hence, a farmer in negotiating a loan must keep in mind the added output that will occur under average or normal growing conditions. There is also a price risk, which arises out of changes in the price of products between the time the loan is made and the time it must be paid. If prices should advance during this period and weather and other conditions are normal, then the chances for repayment are greatly enhanced. But if the reverse is true, the farmer may not be able to pay off the loan when it is due. It often happens that, because of poor judgment used in estimating these risks, farmers often find themselves hopelessly in debt.

2. Time of repayment. It is important for farmers in negotiating a loan to arrange for its repayment at such a time or times as the income from the project for which the loan was made will be available. This principle may be called the "time of payment" principle. If this principle is not followed, the farmer will not have the funds to repay the loan when it is due. Under such circumstances, he will be obliged to renew the loan, which usually adds to its cost; or, failing in this, he will find himself in an embarrassing situation. His creditors may foreclose and sell such assets as have been used for security. Often poor timing of the loan leads to further indebtedness, which may ultimately bankrupt the farmer. Not infrequently wily creditors use this device of bad timing to force farmers into bankruptcy or to gain control of the farmer's business. Many good farms have been lost in this fashion.

3. Rate of repayment. When a debt is incurred for any instrument of production the effect of which lasts over several years, the rate of repayment becomes important. In all those cases where the effect of the instrument lasts only one year,

such as funds used to buy seed or fertilizer, the debt ought to be liquidated not later than the end of the year. Some instruments of production, such as livestock and machinery and equipment, however, are used over several years. In all such cases, the debt incurred to obtain their use ought to be paid off gradually, but it should not be extended over a longer period than the effective life of the instrument. For example, if a farmer is buying a tractor and can pay only a part of the purchase price in cash, it will be advisable for him to pay the balance over a period of years, never longer than the useful life of the tractor.

For several reasons, it may be advisable to repay a loan made to buy a tractor in much less time than its full life. The usefulness of tractors, as well as other types of machinery, is often affected by what is called "obsolescence" or loss of value because better and more effective machines have become available. In such cases, it may pay to buy the new machines and sell or discard the old ones. If this is apt to occur, the farmer should be out of debt and in a position to buy the new and more effective machines.

The rate of payment may be affected also by risk involved in using the instrument. In not a few cases, especially in the case of costly equipment, the instrument may be subject to considerable damage or total destruction, which may occur at any time it is in use. For example, a tractor or a combine may be damaged beyond repair by a careless workman or operator. An expensive animal may be injured to such an extent as to impair its usefulness. These risks may be covered by insurance; but, if they are not, the rate of repayment should be increased in order to liquidate the indebtedness as soon as possible.

4. The size of the payment. A fourth principle involves both rate and size of the payments. This principle may be stated as follows:

The annual payments in principal and interest should correspond in size to the annual net income expected of the elements for which the loan was obtained.

In actual practice annual payments are usually of equal size, because it is assumed that the contributions of the productive agent (to the farm income) will be the same each year. Of course, this assumption is not always true. The productivity

of an element will vary from year to year, and in many cases it will normally decline with continued use. If the productiveness declines, the annual payments should decline also; otherwise, hardships will be imposed upon the farmer in the latter part of the period. That is, the farmer will find it increasingly difficult to meet his obligations, unless a part of the excess returns during the early part of the loan period be set aside as a reserve fund.

In some cases, the productivity of an element may increase at first, remain constant for a while, and then decline. In such cases, the payment made annually should correspond to the change in productivity. The principle may be illustrated as follows:

Suppose a farmer needs $20,000 to develop a certain enterprise and that, normally, this loan would be distributed over a period of thirty years. Suppose further that such payments, including interest, are $1,000 per annum. A study of the enterprise shows, however, that for the first five years the returns available for loan payment[2] would not be $1,000, as the loan required, but $500 per year; from the sixth to the tenth year, inclusive, the income would be $2,500 per year; from the eleventh to the twentieth year, inclusive, $1,000 per year; and from the twenty-first to the thirtieth, inclusive, $500 per year. Then, according to the principles stated above, the payments per annum should be arranged as follows: For the first to the fifth year, $500; from the sixth to the tenth, $2,500; from the eleventh to twentieth, $1,000; and for the remainder of the period, $500. Since varying the payments to correspond with income is not generally practiced, the farmer must set aside from other sources funds to meet the equal annual payments.[3]

Questions

1. What does the word "credit" mean?
2. What are some of the terms and instruments used in the granting of credit?
3. Why do modern farmers need to use credit?
4. What items are involved in the cost of credit?

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[2] This means that other necessary costs have been deducted from the gross income of the project.

[3] G. W. Forster, *Farm Organization and Management*, Rev. Ed. New York: Prentice-Hall, Inc., 1946, pp. 464-68.

5 What is meant by "concealed costs"?
6 State the principles involved in the use of credit.
7 Why should a farmer, when borrowing funds, insist that the repayment of these funds be correlated with the income derived from the use of such funds?
8. Suppose a farmer borrowed $1,000; the interest rate is 6 per cent and a flat fee of $10 is charged. What would be the cost of this loan if (*a*) the loan was discounted at 6%, (*b*) the interest was paid when the loan was repaid, and (*c*) the loan was discounted and the loan was repaid in 12 equal monthly installments?

References

Forster, G. W., *Farm Organization and Management*, Rev. Ed., Chapter XXVI. New York: Prentice-Hall, Inc , 1946.

Ibach, Donald B., and Forster, G W., "Investment Credit to Improve Farming Systems," North Carolina Agricultural Experiment Station, *Technical Bulletin No. 89*, December, 1949.

Lange, N. Gunner, Forster, G. W., and Kenyon, B. W., "Cost of Production Credit," North Carolina Experiment Station, *Technical Bulletin No. 80*, September, 1944.

Murray, William G., *Agricultural Finance*, Chapter 1. Ames: The Iowa State College Press, 1947.

Norton, L. J., *Financing Agriculture*, Chapter IX. Danville, Ill.: Interstate, 1948.

CHAPTER 19

Federal Farm Credit System

THE FEDERAL Farm Credit system, as it exists today, is the result of several acts passed by the Congress of the United States. The first of these was passed in 1916 and created the Farm Loan system to provide *mortgage credit* to farmers. It was not until 1923 that this system was augmented by the Agricultural Credit Act, which provided *intermediate credit.* These two forms of credit, however, did not supply fully the credit needs of the farmer. *Production credit* was added by the Farm Credit Act of 1933, which also provided for the establishment of "Banks for Cooperatives." During this period the Congress created several governmental agencies to discount farm paper or to extend loans to farmers—notably the War Finance Corporation, the Farm Security Administration, and the Rural Electrification Administration. In addition to these, the Congress provided temporary relief for farmers who, for one reason or another, were in financial distress. The seed and feed loans of 1934 are examples of such assistance.

Federal Farm Loan System

The Federal Farm Loan system emerged as a result of specific developments that were in full swing at the turn of the century. The ratio of mortgaged farms to all farms was increasing rapidly. In 1900, 28.9 per cent and in 1920, 37.2 per cent of all farms were under mortgage. The average debt per farm increased from $1,224 in 1890 to $3,356 in 1920.

There was also considerable diversity in the interest rates and in the cost of mortgage loans among the states. Rates varied in 1915 from 5.3 per cent in New Hampshire to 11.4 per cent in New Mexico, with an average rate for the United States of 8.1 per cent. In many cases, these rates were unsatisfactory to the farmer. Commissions charged for new and renewable

mortgage loans varied from 0.2 per cent in Delaware to 3.6 per cent in North Carolina.[1]

The fundamental difficulty, however, with the farm mortgage situation during this period was the inability of the then prevailing system to supply standardized securities by which the investment market could be reached for financing farmers To remove this defect, the Federal Farm Loan system was established by an act of the Congress. The act provided for twelve regional or district Federal Land Banks, which were located in the following cities. Springfield, Baltimore, Columbia, Louisville, New Orleans, St. Louis, St. Paul, Omaha, Wichita, Houston, Spokane, and Berkeley. These banks were placed under the control of the Federal Farm Loan Board. The function of this system was to make long-term loans to farmers.

1. Sources of Federal Land Bank funds. Each district Bank had originally a capital of $750,000, which was subscribed by the Secretary of the Treasury Funds used for making loans are obtained through the sale of farm loan bonds to the investing public. These bonds are of two types· (1) individual bonds issued by each Bank and (2) consolidated bonds issued jointly by all Banks. The Banks of the system are responsible jointly for the bonds issued by the individual Banks. Federal Land Bank bonds are secured by the farm mortgages indorsed to the banks by the National Farm Loan associations. These mortgages are turned over to a Bond Trustee, who holds them as security for the purchasers of the bonds. The bonds are not specifically backed by the government of the United States. To assist in the sale of bonds during the depression, the Federal Farm Mortgage Corporation was established by an Act of the Congress in 1934. This corporation buys Federal Farm Loan bonds and sells Federal Farm Mortgage bonds, which are guaranteed as to interest and principal.

2. How loans are made. The district Banks do not make loans directly to borrowers. Contact with the borrower is through National Farm Loan Associations, which may be organized by ten or more farmers whose requests for loans total at least $20,000. The farmer-borrower executes a first mortgage to his association, which in turn endorses it to the district Bank.

[1] E G Nourse, *Agricultural Economics*, p 700 Chicago. The University of Chicago Press, 1916.

The Bank sends the funds to the association, which turns them over to the borrower. The associations are, in fact, cooperative credit organizations of farmers. In order to tie the members more closely together, each borrower is required to buy stock in his association to the amount of 5 per cent of the loan, but the member is liable only to the extent of the stock subscribed.

Loans may be made in amounts from $100 to $100,000, but those in excess of $25,000 must be approved by the Land Bank Commissioner. Loans are made up to 65 per cent of the normal agricultural value of the farm. Requests for loans must be passed on and approved by the credit committee of the association and by the appraiser of the Bank.

Interest rates on mortgage loans are limited to not more than one per cent above the rate on the latest issue of Federal Farm Loan bonds (see below), but they can never exceed 6 per cent. The rate on any mortgage loan cannot be increased during the life of the loan.

3. Use of loans. Loans obtained through the Land Bank system may be used to purchase land, equipment, and livestock, to construct and repair buildings, to refinance indebtedness, and to acquire working capital.

4. Repayment of mortgage loans. Land Bank loans are usually made for a period of 20 to 30-odd years. Payments may be made annually or semi-annually on dates selected by the borrower, and the repayment schedule may be changed to meet changed conditions. Payments consist of an equal periodic payment on principal, plus interest at the agreed rate on the unpaid balance of the loan. It is the policy of the Bank and of the associations to help farmers get out of debt. Accordingly, advance payments may be made at any time, without payment of any fee for the privilege. Loans may be paid in full on any repayment date after a period of five years.

5. Results obtained by the Federal Loan system. Millions of dollars have been extended to farmers in mortgage loans to be used in purchasing their farms and in refinancing their indebtedness. The rate of interest on farm mortgage loans has declined and has been made more uniform. The cost, other than interest, also has declined. The terms of the loans have been made more satisfactory to farmers.

During the thirty years since 1917, the Land Banks have

granted 1,040,555 loans for a total of 3,749 million dollars. The peak year was 1934 when 190,000 loans were granted, totaling 730 million dollars. Loans outstanding have been reduced from 2,071 million dollars in 1935 to 910 million in 1947.

Intermediate Credit System

The Federal Intermediate Credit System was created by the 67th Congress when it passed the Agricultural Credit Act of 1923. Conditions in agriculture prior to the passage of the act were very unsatisfactory due to the abnormal conditions caused by World War I (see Chapter 24). Production from farms had been increased to meet the demands of the Armed Services, and prices of products had risen to stimulate the increase in production. The result was an unstable situation that could continue only if prices remained high. But farm prices collapsed. The following indexes illustrate the extent of the collapse (1913 = 100).

INDEX OF FARM PRICES, 1920-21

	1920	*1921*
January	247	143
June	237	114

This drastic decline in farm prices created a credit crisis for the banks of the agricultural sections. Farmers obviously could not pay their loans, and over-extended banks could not renew these loans and were forced to foreclose. Farmers felt that if their credit had been originally arranged for longer and more favorable periods of time, the crisis could have been averted.[2]

1. The nature of the system. The act provided for the establishments of twelve Intermediate Credit Banks to be located in the same cities as the Federal Land Banks. Intermediate Credit Banks do not deal directly with farmers and stockmen, nor do they receive deposits or otherwise conduct a general banking business. They are authorized to discount or make loans on the security of agriculture and livestock paper offered to them by national or state banks, trust companies, agricul-

[2] For a more detailed account of this period see Freda Baird and C. L. Benner, *Ten Years of Federal Intermediate Credits.* Washington, D. C.: The Brookings Institution, 1933, and also Clara D. Eliot, *The Farmers' Campaign for Credit.* New York: Appleton & Co., 1927.

tural credit corporations, livestock loan companies, savings institutions, cooperative banks, production credit associations, and Banks for Cooperatives. They are also authorized to make loans or advances to cooperative associations on the security of staple agricultural commodities, livestock, or other collateral approved by the Governor of the Farm Credit Administration.

The Banks were established primarily to aid in financing the production and harvesting of crops in the raising, breeding, fattening, and marketing of livestock, in the cooperative marketing of agricultural products, and in the cooperative purchasing of farm supplies.

2. Source of funds. When the intermediate credit system was first established, the Secretary of the Treasury was empowered to buy capital stock of each district Bank to the extent of $5,000,000.

Later, on January 31, 1934, the Federal Farm Loan Act of 1916 was amended to provide for enlargement of the financial resources of the Intermediate Credit Banks. According to this amendment, the governor of the Farm Credit System was empowered to subscribe to the capital stock on any such Bank, or to its paid-in capital stock, such sums as, in his opinion, were necessary to meet the credit requirements of eligible borrowers. This amendment also gave the governor the power to decrease or increase such capital stock or paid-in surplus as the demands of borrowers changed. In carrying out the provisions of this amendment, which was embedded in the Federal Farm Mortgage Corporation Act, a revolving fund of $40,000,000 was created out of which the governor could, at his discretion, make contributions to the capital stock or paid-in surplus to any Bank. This sum was divided into two parts, $10,000,000 to be used for the purchase of capital stock, and $30,000,000 for paid-in surplus, and was distributed to the Banks in June and July, 1934. By this action the paid-in capital stock of the Intermediate Credit System was increased to about $70,000,000. Most of these funds have been invested in United States securities and Federal Farm Mortgages, Corporation Bonds, which are guaranteed as to interest and principal.

Funds for lending operations also may be obtained by selling to the "investing public collateral trust debentures with a

maturity of not more than five years." These debentures are secured by agricultural paper bought in the process of lending money to eligible borrowers. However, no Bank may "obligate itself for debentures or other obligations in excess of ten times the amount of its paid-up capital and surplus. For the system as a whole, debentures outstanding at end of June 30, 1947 were $520,325,000. These debentures were issued with maturities of three, five, six, and nine months."[3]

3. Interest rates. The Federal Intermediate Credit Bank system is operated primarily for the benefit of the farmers and the stockmen rather than for the benefit of the lending institutions with whom the banks deal. The present rate of interest charged by all the Banks of the system is 1½ per cent per annum. Uniformity in rates charged by the Banks fits in with other requirements of the Act and regulations. Notes of farmers and stockmen carrying a rate of interest exceeding 3 per cent are ineligible for discounting.

4. Some results. This system has provided a type of credit badly needed by farmers. Since their organization, these Banks have extended to some two thousand institutions credit in excess of eight billion dollars and have sustained losses of slightly less than one tenth of one per cent of the amount of credit extended. As of June 30, 1947 there were outstanding loans to Production Credit Associations amounting to 355.5 million dollars, to Banks for Cooperatives, 10.3 million, and to other cooperative associations, 72.2 million.

Production Credit System

This system was established by the Federal Credit Act of 1933 under which twelve Production Credit corporations were authorized and were to be located in the same cities as the Federal Land Banks and the Federal Intermediate Credit Banks.

1. How the system operates. The methods adopted by the Federal Land Banks were so successful that they were applied to the Production Credit system. Cooperation among farmers is encouraged by credits being extended cooperatively through local Production Credit associations. Loans are made to the

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[3] Annual Report of the Farm Credit Administration, 1947-48, p. 13.

farmer-members of the associations, which are the point of contact between the farmer and the ultimate sources of credit. The loan application must be approved by a loan committee, and the note is signed by the farmer and made payable to the local association. The secretary-treasurer endorses the note for the association and sends it for discount to the district Intermediate Credit Bank. If the loan is satisfactory to the

FIG. 34. AN APPLICANT FOR A PRODUCTION CREDIT LOAN TALKS IT OVER WITH THE SECRETARY-TREASURER OF HIS ASSOCIATION.

examiners of the Credit Bank, the funds are forwarded to the association to be disbursed to the farmer-borrower.

2. Production Credit corporations. The Production Credit corporations perform four specific functions: (1) They help in the organization of Production Credit associations in their own districts; (2) they furnish some of the capital for the associations; (3) they provide general supervision and offer advice when needed; and (4) they represent the associations in dealing with the Intermediate Credit Banks.

These corporations, when first organized, were capitalized

by the United States Government. The capital is allocated to the various districts on the basis of their credit needs rather than on the basis of an equal allotment to each, although at the time they were organized each corporation was capitalized at $7,500,000. The total capital of the twelve corporations is 120 million dollars, in addition to earned surpluses.

FIG. 35. A SATISFACTORY END TO AN INTERVIEW.

The capital of the corporations is invested partly in Class *A* stock of the Production Credit Associations and partly in interest-earning securities. The corporations depend mainly on the interest received from their other investments to meet their operating expenses. At the close of the fiscal year ending June 30, 1947 the total of Class *A* stock owned by the corporation was 40.5 million dollars, and their investments in United States Government obligations totaled 67 million dollars. Many local Production Credit associations have been able to retire

the Class *A* stock owned by the corporations. By January, 1948, 31 associations had completed their payments and had come to full member ownership.

The earnings of each corporation are disposed of as follows. (1) Any impairment of capital stock of the corporation must be removed; (2) a surplus equal to 25 per cent of the paid-in capital stock is to be maintained; and (3) any earnings remaining after (1) and (2) have been provided for are to be paid in the revolving fund to be used to retire capital stock purchased by the Government through the Farm Credit Administration.

3. Production Credit associations. Production Credit associations are agents of the Production Credit corporations. Their function is to make short-term loans to farmers.[4] Loans may be made by a Production Credit association for the following purposes: (1) crop loans used to pay cash cost of the producing, harvesting, or marketing of crops; (2) livestock loans used to purchase, raise, fatten, and market livestock, or to refinance indebtedness on livestock; (3) dairy loans used for financing or refinancing the purchase of dairy products; (4) poultry loans used to finance production of poultry and eggs; (5) general purpose loans used to obtain equipment, repairs, work animals, and working capital.

Loans are made for any amount from $50 up. The amount a farmer or stockman may borrow depends primarily upon how much he needs to carry on his business properly and upon his ability to repay the loan out of the farm income. Farmers usually give a first lien on crops and livestock as security for their loans. The interest rates on loans cannot be greater than 3 per cent more than the discount rate with the Intermediate Credit Banks. The rate of interest now charged on loans is 4½ per cent a year. Interest is not deducted at the time the loan is made, but it is payable when the loan is due. Interest is charged on only the actual amount borrowed and for the actual time the money is in use. A nominal fee is charged to cover the cost of making and servicing the loan.

[4] The Production Credit associations are permitted to issue two kinds of capital stock—Class *A* and Class *B*. Class *A* stock is issued to and owned by the parent Production Credit corporation and other investors. It must equal 20 per cent of the amount of loans made The proceeds of Class A stock are invested in government bonds, which are pledged with the Intermediate Credit Banks to obtain rediscount privileges. Class *B* stock is held by borrowers. Each borrower must own $5 of Class *B* stock for each $100 or fraction thereof of his loan

Loans are repaid as the crops, livestock, or livestock products financed are sold. Dairymen and commercial poultrymen usually pay their loans in installments out of their regular checks for milk, cream, or eggs. Loans for crop production usually come due during the marketing season. Livestock loans and loans that include substantial amounts for the purchase of machinery, the repayment of debts, or for other capital purposes usually come due at the end of twelve months, and the unpaid balance at that time can be renewed if satisfactory progress has been made. In short, repayments are planned to fit the individual's operations.

4. Results. In the 1947-48 Annual Report of the Farm Credit Administration, there is a statement giving the results of the Production Credit associations:

> The 503 Production Credit associations closed 266,449 loans for $848,771,290 for their members during the year ended June 30, 1948, of which $723,536,620 represented cash advances and $126,234,670 covered renewals of loan balances. . . .
>
> On June 30, 1948, there were 233,965 loans outstanding in the associations, aggregating 464,831,438, compared with 206,632 loans for $362,005,322 outstanding on the same date the previous year. This represented an increase of 24,333, or 11.6 per cent, in number, and $102,826,116, or 28.4 per cent, in amount The average loan outstanding on June 30, 1948, was $1,987, which was about $260, or 15.1 per cent, more than the previous year.[5]

These data, when compared with loan business during the first few years of operation, indicate the growth in the service that this organization is providing to farmers. In 1934, the first year of operation, the loans closed were 135,432, and the amount advanced, $107,243,065. For 1935, loans closed were 218,814, and the amount advanced, $196,306,112.

Earnings of each association are used for the following purposes: (1) to recoup losses in excess of reserve for bad debts; (2) to remove any impairment of capital; (3) to create and maintain a reserve against bad loans; (4) to create and maintain a guaranty fund amounting to at least 25 per cent of the paid-in capital stock of each association; (5) to pay dividends with the approval of the Production Credit corporation; (6) to retire stock owned by the Production Credit corporations.

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[5] Annual Report of the Farm Credit Administration, 1947-48, pp. 7-8, 108

On June 30, 1947 there were 504 active associations, of which the largest number (90) were in the Columbia, South Carolina, district. Since their organization, associations have loaned to farmers cash in the amount of 3.8 billion dollars of which only 1/10 of one per cent has been reported as uncollectible.

Banks for Cooperatives

With the growth of farm cooperatives there was an insistent demand for the creation of a source of funds that would be available to these institutions. The answer to this demand was the Banks for Cooperatives. These were created under the Farm Credit Act of 1933. There is one such bank in each of the twelve districts in which are located the other units of the Farm Credit system, and one central bank located in Washington, D. C.

1. How banks are financed. To provide the capital for the central cooperative bank, the Governor of the Farm Credit Administration subscribed and paid in $50,000,000 on behalf of the United States government. This sum was obtained from the balance of a $500,000,000 that had been provided by the United States government to the Federal Farm Board authorized under the Agricultural Marketing Act of 1929. To date, $178,500,000 of the total capital for all district banks and the central banks has been subscribed by the United States government. In addition to this sum, the cooperative associations that must subscribe to the capital stock have paid in $12,642,500. Thus the total paid-in capital is $191,142,500.

Funds for making loans may be obtained by the central bank from two sources: (1) paid-in capital, surplus, undivided profits, and guaranty fund, and (2) sale of debentures. "The major portion of the funds used by the banks" says a recent report, "was derived from the sale to the investing public of consolidated debentures in the total face amount of $692,815,000.

2. Cooperative feature of the bank. This system is cooperative to the extent that each cooperative association using the service of any bank must purchase stock up to 5 per cent of the amount of the loan.

However, in the case of commodity loans at the present time the stock which the borrower must own is equal to approximately 1 per cent of the loan. If a cooperative is organized under a

statute which does not permit ownership of stock in such institutions as banks for cooperatives, it pays into a guaranty fund an amount equal to the stock which would otherwise be purchased.[6]

3. Eligibility of borrowers.

To be eligible to borrow from a Bank for Cooperatives, a cooperative must be either:

(1) An association in which farmers act together in processing, preparing for market, handling, or marketing the farm products of the members;

(2) An association in which farmers act together in purchasing, testing, grading, processing, distributing, or furnishing farm supplies;

(3) An association in which farmers act together in furnishing farm business services; or

(4) An association which represents a combination of two or more of the foregoing.

It is also necessary that a cooperative be operated for the mutual benefit of its members and must not deal in farm products, supplies, and business services for non-members in an amount greater in value than its business with members At least 90 per cent of the voting stock of a capital stock corporation must be held by producer-members or associations of producers.

A further requirement is that the cooperative must either limit its dividends on capital stock or membership capital to 8 per cent a year, or else provide that no member may have more than 1 vote in the affairs of the association.[7]

4. Type of loans. These banks may extend these types of loans: (1) operating, (2) facilities, and (3) commodity. Operating loans are made for refinancing indebtedness, to pay operating expenses, and to promote effective merchandising of agricultural products. Facility loans are made to buy, build, or otherwise acquire physical property, or to refinance the cost of buying, leasing, or building facilities. Commodity loans are made for the purpose of assisting cooperatives to make advances to grower-members on products delivered to them, and also to help pay for the cost of marketing such commodities.

5. Results.

During the 1947-48 fiscal year the 13 banks extended $547,601,822 in credit to 1,303 farmers' cooperative associations. The 1947-48 ad-

[6] "Loans to Farmers' Cooperatives," Farm Credit Administration, *Circular No. 6*, 1941.

[7] *Ibid.*, pp. 3-4.

vances compare with $531,510,877 of credit extended in the fiscal year 1947 and $375,701,733 in 1946 Total credit outstanding amounted to $231,518,249 on June 30, 1948, compared with $169,253,043 on June 30, 1947, and $161,987,567 on June 30, 1946.

The volume of credit extended reached an all-time high, exceeding by $16,090,945 the prior high point which was reached during the preceding fiscal year . . .

From their organization in 1933 through June 30, 1948, the 13 banks for cooperatives advanced $3,631,835,736 in credit to 3,882 farmers' cooperative associations. Of this amount 93.54 per cent had been repaid on June 30, 1947, 6.37 per cent was still outstanding, 0 06 per cent was included in liquidation accounts, and 0.03 per cent had been charged off as uncollectible.

On June 30, 1948, 1,559 cooperatives, with an estimated membership of 2,507,816, were borrowing from the banks This compares with 1,379 on June 30, 1947, and 1,251 on June 30, 1946. As indicated, the number of borrowers again increased during the year, continuing the upward trend started in 1946-47 after a relatively steady decline during the war years. This can be attributed to a number of factors, the two principal ones of which are the organization of new cooperative associations and the need on the part of old borrowers for funds to meet increasing costs of operations and to acquire new facilities [8]

The Farm Credit Administration

As these various systems of credit were created by the Congress, they were, as a rule, independent of each other and to some extent overlapping in their functions. Indeed, the agricultural credit policies and activities of the Federal government were under the control of three boards and one executive officer. These were the Federal Farm Loan Board, the United States Department of Agriculture, the Reconstruction Finance Corporation, and the Secretary of the Treasury.

To remedy this situation the Farm Credit Administration was formed by an executive or presidential order on March 27, 1933. This order provided for the coordination and centralization of most of the governmental agencies supplying credit to farmers. The names of the Federal Farm Loan Board and the office of its Chairman, which controlled the Federal Farm Loan system, were changed to the Farm Credit Administration and the office of the Governor.[9] Officers and appointive members

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[8] Annual Report of the Farm Credit Administration, 1947-48, pp. 17-18.

[9] *Farm Credit Administration*, Chapter IV. New York: American Institute of Banking, 1934.

of the Board and their functions were abolished. The Governor of the Farm Credit Administration was vested with all of the powers and duties which the Board had previously held and exercised. The offices of the appointive members of the Board were also abolished, except the Farm Loan Commissioner and the Secretary of the Treasury. At the time this executive order was issued, the United States Department of Agriculture had control of emergency seed and feed loans. This activity was transferred to the Farm Credit Administration, as was also the regional credit corporations, which were at this time under the control of the Reconstruction Finance Corporation. In this fashion the farm credit activities of the Federal government were united and coordinated.

The Organization and Function of the Farm Credit Administration

The chief offices of the Farm Credit Administration are located in Washington, D. C. This organization originally consisted of four main divisions, each of which was under the direct supervision of a Commissioner. The four units were: (1) the Land Bank, (2) Intermediate Credit, (3) Cooperative Credit, and (4) Production Credit. Another unit of equal importance was called the "Regional Agricultural Credit Division" with a director in charge.

In addition to these divisions, there were several others designed to assist in the functioning of the administration. These were: (1) Finance and Research, (2) Administrative, (3) Legal, and (4) Information.

Since the Farm Credit Administration was organized, some changes have been made. The present organization is presented in Figure 36.

The function of the Washington office is purely executive or administrative. It does not engage in lending activities; this function is allocated to the regional offices. The chief executive is the Governor who is assisted by three deputy governors and a legal council. Each of the four main divisions of the Farm Credit Administration is under the direct supervision of a Commissioner. In addition to these functions, the Washington office supervises and directs a number of other activities, such as the revolving fund sections of the 1929 Marketing Act,

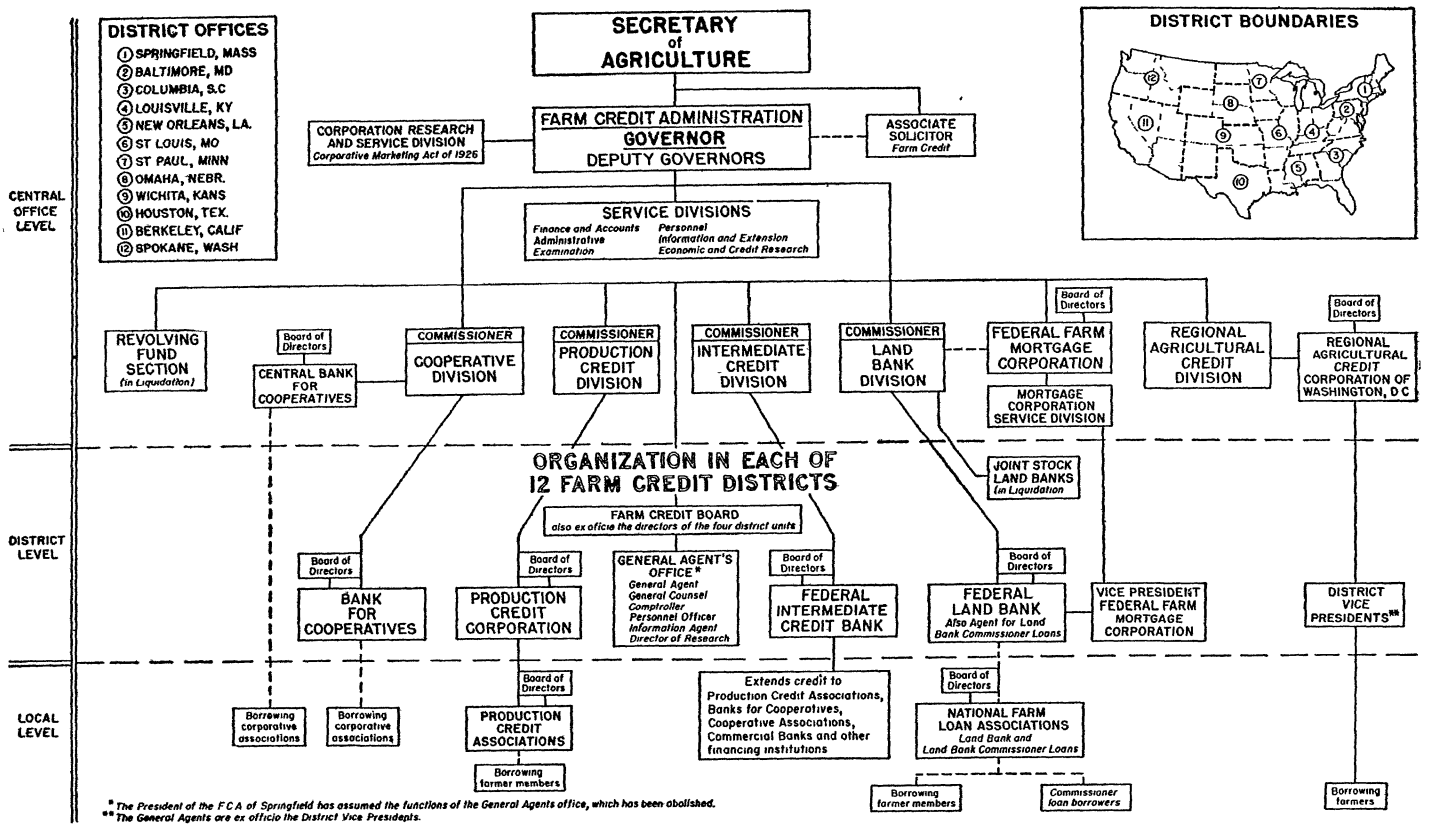

FIG. 36 ORGANIZATION OF THE FARM CREDIT ADMINISTRATION

Regional Credit Corporations,[10] the Emergency Crop and Feed Loans, Farm Mortgage Corporation, the Credit Unions, and Research and Information section.

Each of the twelve districts has an organization that differs from the Washington office. In each district the operations are under a board of directors. The board is assisted by what is called a General Agent and the presidents of four credit institutions, namely, (1) the Federal Land Bank, (2) Bank for Cooperatives, (3) Federal Intermediate Credit Bank, and (4) Production Credit corporation. The specific character of the district organization is presented in Figure 36.

On the local level, two of these four institutions, the Federal Land Banks and the Production Credit corporations, contact the borrowers, not directly but through associations of farmers. Each of these "field" units is organized for the purpose of serving the individual farmer. The National Farm Loan Associations (NFLA's) are the agents of the Federal Land Banks, and the Production Credit associations (PCA's) are the agents of the Production Credit corporations. They are both cooperative units governed by a board of directors.

Questions

1. Name the various credit acts passed by the Congress of the United States and give the date of their enactment.
2. Under what conditions was the Federal Farm Loan system created?
3. What are the chief sources of funds of the Federal Land Banks?
4. Describe briefly how mortgage loans are made and repaid.
5. Give some results in terms of mortgage loans made to farmers.
6. State the nature of the Intermediate Credit system.
7. State the conditions under which the Intermediate Credit system was created.
8. Name the sources of funds used by the Intermediate Credit Banks.
9. How does the Intermediate Credit Bank make loans available to farmers?
10. Describe the Production Credit system.
11. How does the Production Credit system operate, and what are the sources of its funds?
12. How do farmers obtain loans from the Production Credit system?
13. State some of the results, in terms of loans, of the Production Credit system.
14. Describe briefly the Cooperative Banking system.

[10] Established under Emergency Relief Act of July 21, 1932.

15. How are the Banks for Cooperatives financed?
16. Who are eligible for borrowing from the Banks for Cooperatives?
17. Indicate the results that have been achieved by the Banks for Cooperatives.
18. Describe briefly the Farm Credit Administration.

References

Farm Credit Administration. New York: American Institute of Banking, 1934.

Murray, William G., *Agricultural Finance,* Chapters 19-26. Ames: The Iowa State College Press, 1947.

Norton, L. J., *Financing Agriculture,* Chapters XII, XIII, XIV, XVI. Danville, Ill.: Interstate, 1948.

CHAPTER 20

Private Sources of Farm Credit

FARMERS in their search for funds are not limited to Federal credit agencies. Farm credit is available also from private agencies and individuals. For the purpose of this discussion, it will be convenient to use the following classification of private sources of farm credit.

Long-term loans	*Short-term loans*
Life insurance companies	Commercial banks
Commercial banks	Supply merchants and equipment companies
Individuals	Individuals

Long-term Loans

Table 28 shows the amount of mortgage debt, as of January 1, for several years classed as to source. The portion of the total provided by private sources has decreased from 80.9 per cent in 1930 to 52.2 per cent of 1947. These sources, however, are still important.

TABLE 28

FARM MORTGAGE DEBT IN THE UNITED STATES BY SOURCES FOR SELECTED PERIODS*

(Millions of Dollars)

Source	*Jan. 1, 1930*	*Jan. 1, 1935*	*Jan. 1, 1940*	*Jan 1, 1944*	*Jan. 1, 1947*
Total	$9,631*	$7,584*	$6,586*	$5,389†	$4,777†
Federal Land Banks	1,202	1,947	2,010	1,453	976
Land Bank Commissioner	0	617	713	430	146
Life Insurance Companies	2,118	1,302	984	987	890
Commercial Banks .	997	499	534	448	683
Other Government Agencies	639	274	130	176	190
Individuals and Others	4,675	2,945	2,215	1,895	1,892

* *Agricultural Statistics*, 1944, p 459
† *Agricultural Finance Review*, 1947, p 700

1. Insurance companies. In the past, insurance companies have been one of the principal sources of farm mortgage credit. Today, their position in the field of farm credit has declined largely because of the creation of the Farm Credit system, which is now supplying a large part of the credit needs of farms. (See Table 28.) These companies, however, are still an important source of farm credit, and loans may be obtained under terms that are more convenient to the borrower than are those of governmental agencies. The reason for this is that they are private corporations and are not subject to the same regulations with respect to the size of the loan, the rate of interest, and the terms of repayment as are government agencies. For example, farm mortgage loans made by the Federal Land Banks are limited to $50,000, and all loans over $25,000 must be approved by the Land Bank Commissioner. No such regulation is in force among insurance companies.

2. Commercial banks. Commercial banks have been a source of mortgage credit from the early days of their establishment. This source of mortgage credit was reduced by the National Bank Act of 1863, which created the national banks but denied them the privilege of extending credit on land mortgages. This restriction prevailed until 1913 when the Federal Reserve Act partially removed it. The act compelled all national banks to become members of the Federal Reserve system. It also partially removed the restriction against mortgage loans. The act allows national banks to extend mortgage credit on farm land. No loan may extend over a period of five years; nor can it be greater, to any one person, than 10 per cent of the capital and surplus of the bank; nor can it be for more than 50 per cent of the value of the land and improvements.

State banks have always been allowed to lend on mortgage security, and other commercial banks have continued to deal in farm mortgages. It is true that, during the depression years of the thirties, mortgage loans by commercial banks were curtailed because of the increased activities of Federal lending agencies, a decline in the value of farm land, the rise in foreclosure rates, and the cancellation of debts. Recently the relatively low position of commercial banks in the farm mortgage field is to be explained largely by the improvement in the finan-

cial position of farmers and the tendency for them to repay their debts and to finance their activities out of earnings.

3. Individuals. The importance of this source of mortgage credit is well stated as follows:

> Until the last few days individuals have been the most important source of farm mortgage credit and still rank second only to the Land banks in volume of loans. They probably surpass these banks in number of loans. A large part of the mortgages held by individuals have been accepted by them as part payment for farms they have sold. Individuals who make loans on farms as an investment of their money usually are personally acquainted with the borrowers. Because of the personal relationship an individual often may be the best source of mortgage credit, but he also may be the least desirable for the same reason. As a rule, short-time contracts are made, and the death of the lender may change the situation unexpectedly.[1]

Short-term Loans

1. Commercial banks. These institutions always have been an important source of short-term credit. The banks are usually local institutions whose officers are familiar with the needs and resources of their borrowers. This personal acquaintance with the business reputation of the individuals who seek loans makes extension of credit a relatively easy matter. If the borrower states his needs and satisfies the bank as to security, the credit is at once available. Not all agricultural loans are self-liquidating within one season (for example, loans for the purchase of dairy cattle or workstock). This means that for some purposes farmers need later maturity dates for their loans. The Federal Reserve Act of 1913 helped this situation by making agricultural paper eligible for re-discount at the District Federal Reserve bank.[2] The term of such paper may not be over six months. The amount of farm credit extended by commercial banks is shown in Table 29.

As Murray and other students of farm credit have pointed

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[1] "The Credit Road to Farm Ownership," Farm Credit Administration, *Circular No. 18*, p. 14.

[2] Discounting by banks is the process of deducting the interest on a note in advance and making the net proceeds available to the borrower When banks feel the need of more credit to lend, they often rediscount the notes in their possession at other banks. Those banks that are members of the Federal Reserve system can do this readily under rules laid down by the system. The process is essentially the same as when the borrower discounts the note originally.

out, commercial banks have a number of advantages over governmental credit agencies. These advantages are:

a. Commercial bankers know their customers personally, their ability and willingness to pay.

b. Commercial banks are often conveniently located.

c. Farmers needing credit, in many cases, will be depositors of such banks.

On the other hand, commercial banks as sources of farm credit may have certain disadvantages. These are:

a. Credit is not always available especially in depression periods.

b. Interest rates and other costs tend to be noncompetitive and higher than would appear necessary.

c. Bankers, although they may know their farmer-customers, often have a limited knowledge of farm management problems; hence they are not in a position to advise farmers as to how much to borrow or how to use the funds effectively.

However, as one author points out:

A number of banks in recent years have been employing men trained in agriculture in order to provide agricultural banking services for their farm customers. The men who are doing this work are not only adapting bank loans to fit the needs of farm borrowers but are also spending time with borrowers out on their farms assisting them in obtaining the kind of credit they need and providing information on management services which the borrowers find helpful.[3]

TABLE 29

AGRICULTURAL LOANS BY COMMERCIAL BANKS NOT SECURED BY FARM REAL ESTATE
(As of January 1)

Year	*Loans Outstanding (in millions)*	*Year*	*Loans Outstanding (in millions)*
1931	$1,936	1944	$1,505
1935	808	1945	1,723
1940	1,094	1946	1,314
1941	1,281	1947	1,355
1942	1,450	1948	1,610
1943	1,642		

Source *Agricultural Statistics*, 1946, p. 608, *Agricultural Finance Review*, November, 1948, p 116

[3] William G. Murray, *Agricultural Finance*, p. 184. Ames: The Iowa State College Press, 1947.

2. Merchants and individuals. Merchants extend credit by the simple expedient of arranging with the purchaser to pay for his supplies when his crop is marketed. Such credit must of necessity be limited to a period of not more than one season. The merchant's income comes from the profit on the goods he sells, not from extending credit. There is a large amount of risk involved in merchants' credit. The debtor's crop may fail or he may deliberately defraud the merchant. For this reason the credit obtained from supply merchants is more expensive than that from other sources. The merchant will charge those who pay their bills enough to cover the losses caused by those who do not.

Although no accurate estimate of its amount can be made, the amount of borrowing from individuals is very great. The lender is in much the same position as the local bank in lending money. He is usually acquainted with the borrower and will not lend funds to men whose reputation for repayment is bad. Interest rates and other costs are usually regulated by the bargaining ability of the two parties but differ widely from those of commercial banks. A number of studies of merchant credit have been made, all of which indicate that the cost of this type of credit is much higher than bank credit obtained from governmental agencies. The reasons for the high cost are the uncertainty of repayment and the inability of farmers to obtain credit from other sources. From 1923-1926, study of this subject showed that gross annual cost of merchant credit was 23.3 per cent; the losses because of unpaid loans were 13.9 per cent (that is, the net average annual cost was 9.4 per cent).[4]

Questions

1. What are the chief sources of funds for agriculture, other than the Federal Farm Credit system?
2. To what extent do farmers use "private" credit agencies and individuals as sources of funds?
3. What are some of the advantages and disadvantages in using commercial banks as sources of credit?
4. Why are funds obtained from country merchants more costly than funds obtained from credit agencies, such as banks?

[4] David L Wickens and Garnet W. Forster, "Farm Credit in North Carolina—Its Cost, Risk and Management," North Carolina Agricultural Experiment Station, *Bulletin No 270*, 1930

5. For your community get the cost of short-term loans extended to farmers by (*a*) commercial banks, (*b*) merchants, and (*c*) production credit associations.

References

Murray, William G., *Agricultural Finance*, Chapters 16 and 17. Ames: Iowa State College Press, 1947.

Norton, L. J., *Financing Agriculture*, Chapters III, XVII, and IV. Danville, Illinois: Interstate, 1948.

CHAPTER 21

Farm Insurance

IT HAS BEEN suggested in a previous chapter that the farmer is taking on many aspects of the businessman. One of the ways in which this is manifested is in his use of insurance. Businesses have for many years accepted insurance costs as regular and necessary expenditures, and farmers have used insurance to a limited extent. Today insurance is being applied in new and various ways to farmers' problems. It is probably true, however, that it is still not being used by farmers to the extent to which it should be. Under the stress of current expenses, it is easy to convince one's self that the cost of insurance should be postponed to a "more convenient season." This chapter will undertake to describe some of the risks of farmers, the nature of insurance, and its advantages in overcoming the effects of losses.

Nature of Insurance

Insurance is a means by which the seriousness of a risk to the individual can be lessened. A risk is the exposure of a person or an article to loss or injury. Any individual can easily make up a list of risks to which he or his possessions are exposed, a list that, if he allowed his imagination to play on it, might cause him many an anxious hour. A farmer's list should include fire, lightning, windstorm, and hail; fall in price; deterioration in quality of stored products caused by mold, insects, freezing, heating, or mere aging of perishables; theft and accidents.

Some of these risks can be reduced by advanced planning. For example, the risk of insect pests can be foreseen, and poison sprays applied. Other risks come suddenly, without warning, in the nature of calamities that no amount of planning can prevent.

Types of Insurance

In spite of the obvious need for insurance, carrying it is far from a universal practice of farmers. In a survey made of 625 representative farmers in North Carolina, the following use of insurance was discovered:

PERCENTAGE OF FARMERS USING VARIOUS TYPES OF INSURANCE[1]

Type	*Percentage*
Fire	58
Life	40
Windstorm	28
Hail	19
Livestock	12
Automobile	
Fire, theft	11
Personal injury	6
Property damage	9
Accident or sickness	3

1. Life. One risk that confronts every human being is that his death may occur at an unfavorable time. A young farmer just starting out in life, recently married, and engaged in making payments on his farm, dies suddenly. Under such circumstances life insurance is a great boon; it carries out the plans the young man made; it provides for his family.

And not only for young farmers does life insurance reduce risk. Farming is somewhat different from other industries in many ways. For one thing, a farmer must make his plans at least for one growing season; and, once he has launched his projects, he is committed to them for at least one year. Life insurance can perform a great service in such circumstances. Suppose a farmer has a fine crop of tobacco in the field, and suppose he dies in the midst of the season. What is to become of the crop without his labor, his management, his planning? Who is to pay the curing and marketing costs? With sufficient insurance the crop could be harvested, cured, and marketed without delay, and the farmer's dependents spared unnecessary trouble and possible loss.

Again, the farmer with large holdings can use life insurance. There are a considerable number of farmers in the United States

[1] From an unpublished study made by North Carolina Agricultural Experiment Station, Department of Agricultural Economics, 1938.

who possess large holdings in both land and other property. In the event of their death, it is entirely conceivable that the inheritance taxes would be considerable and troublesome to raise. Life insurance furnishes the answer to this problem. A policy arranged for that purpose furnishes the cash without the necessity of parting with any assets.

TABLE 30

PERCENTAGE OF FARM FAMILIES IN THE UNITED STATES PAYING LIFE INSURANCE PREMIUMS AND AVERAGE PREMIUMS PAID, BY NET INCOME GROUPS*

Net Income Groups† *(dollars)*	*Families Interviewed (number)*	*Percentage of Families Interviewed Paying Premiums (per cent)*	*Average Premiums Paid by Those Carrying Insurance (dollars)*
Less than 500	2,729	30.9	31.52
500-999	5,433	35 5	37 94
1,000-1,499	3,846	45.8	61 48
1,500-1,999.	2,264	51.1	78 17
2,000-2,999	1,800	59.7	108 76
3,000 and over	806	64.9	208 92
Total or average	16,878	43.2	72 00

* Source "Life Insurance for Farm Families," U S Department of Agriculture, *Miscellaneous Publication No 621*, February, 1947, p 2

† Nonmoney, as well as money, income included in computing net income

2. Fire. Losses due to fire, lightning, wind, and hail are of importance to farmers, because they constitute insurable risks. Chief among these four is fire because of its persistence, its universal occurrence, and its extensive ravages. Fire is a hazard common to all buildings. Farm property, often located far from adequate fire-fighting facilities and seldom fireproof in construction, is highly susceptible to damage and destruction by fire. The importance of fire insurance to farmers may be emphasized by the fact that the value of farm buildings in 1940 was 31 per cent of the total value of the farm property.[2]

3. Automobile. Since farmers have become such extensive drivers of automobiles and trucks, they have subjected themselves to all the risks that attend the driving of cars. By all odds the greatest risk that the automobilist faces is the risk of causing death. Cases are on record of a man's losing his entire property for such a reason. Every time a farmer turns from

[2] *United States Census of Agriculture*, 1940.

his own lane into the highway he places himself under that risk. The answer, of course, is liability insurance, the form that protects him against adverse damage suits and pays the damages.

4. Crop insurance. Compared with other well-established types of insurance, crop insurance is very new indeed. The Federal Crop Insurance Corporation was created by an act of Congress in February, 1938. Originally only wheat was included in the program, but in 1941 the program was extended to include cotton. In 1945 the law was expanded to cover trial insurance on corn and tobacco.

The Corporation offers two kinds of insurance: (1) against loss of investment, with the amount not to exceed 75 per cent of the investment in the crop, and (2) against loss of yield, with the amount limited to 75 per cent of the average yield of the farm. Premium rates are based on the normal loss expectancy of the county, as shown by historical records. The farmer may select different amounts of coverage (up to 75 per cent), which will affect the size of the premium. Premiums and losses are computed in bushels or pounds, reduced for convenience to dollars.

When the program was begun, the Corporation was faced with lack of reliable data on yields and losses in the counties selected. Accurate premiums can be computed only on experience (for example, life insurance), but this will be gained as time goes on. It is expected that the program will be developed to fit the needs of a large portion of farmers and will provide stability in farm income.

Table 31 contains some figures on the use of crop insurance. It will be noted that the losses on cotton were greatly in excess of the premiums collected in 1945 and, to a less extent, on corn. This was caused by adverse weather conditions. Good weather for wheat, however, caused the losses to be less than the premiums. A single crop or a single year's experience is not a sufficient basis on which to judge the success or failure of such insurance.

Murray, commenting on governmental crop insurance, states:

> . . . recognition should be given to the progress that has been made in this field during recent years. Although the Government insurance program was not inaugurated until 1938, it is being looked upon by many farmers as a necessary and permanent part of the Government's

farm program. This whole program of crop insurance, together with the successful operation of farmers' mutual fire and windstorm insurance companies, is reducing the heavy risk from natural hazards which many an individual farmer faces. Agriculture has suffered much from the vicissitudes of nature, not only because of crop and livestock losses but also because these losses oftentimes make it impossible for them to meet the principal and interest payments on their loans. The development of insurance to cover farm risks, consequently, will enlarge the possibilities of granting farm credit under conditions mutually satisfactory to borrower and lender.[3]

TABLE 31

STATUS OF FEDERAL CROP INSURANCE*

Crop	Number of States, 1946	Number of Contracts		Indemnities, 1945		
		1945	1946	Number	Premiums	Indemnities
Wheat. . .	35	12,838	305,428	2,200	1,085,170 bu.	471,359 bu.
Cotton. . . .	18	89,940	114,270	47,424	22,356,737 lb	74,994,896 lb.
Flax .	12	26,042	10,412	6,861	487,461 bu.	285,270 bu.
Corn .	19	10,414	7,413	3,294	$ 398,002	$ 619,191
Tobacco .	19	12,060	13,842	1,600	$ 679,298	$ 468,552

* Source Report of Administrator, Production and Marketing Administration, 1946, U S Department of Agriculture.

5. Accidents and employer's liability insurance. Farmers are subject to injury or death from accidents. In a study of 7,851 accidents that occurred on the farm, 6.7 per cent resulted in death, and 52 per cent of the victims had to be hospitalized. In most cases the causes of these accidents were traced to the handling of machinery and livestock.[4]

No accurate data are readily available as to accident insurance carried by farmers in the United States. In a study made of Pennsylvania farmers, about 25 per cent carried accident insurance. Of those so covered, 75 per cent of the policies provided for hospitalization. Employers' liability insurance is not used extensively by farmers. In the Pennsylvania survey only seven farmers out of 525 were using this type of insurance.[5] Greene

[3] William G. Murray, *Agricultural Finance*, p. 71. Ames: Iowa State College Press, 1947.

[4] John D. Rush, "Analysis of 7,851 Fatal Farm Work Accidents," Washington, D. C.: Bureau of Agricultural Economics, 1945.

[5] L. F. Miller, and L. V. Rubright, "Insurance Carried by Pennsylvania Farmers," Pennsylvania Agricultural Experiment Station *Bulletin No. 519*, 1949.

County, North Carolina farmers do not carry accident insurance to any great extent, as indicated by the fact that only three per cent reported health, hospital, or accident insurance.[6]

6. Income insurance. Farmers have, in Federal price supports and conservation payments, a form of income insurance. This type of insurance has been in effect since 1934 when the Congress provided for payments to farmers for the purpose of inducing them to adjust their production to market demands. These payments have aggregated some 8,730 million dollars from 1934 to 1948, inclusive. Payments of this sort do not constitute a true form of insurance because the farmers do not make any contribution to the Federal government in the form of premiums. Aside from this technicality, however, there is no doubt that they have augmented the farmers' income during periods of low market prices. What the government has done is to forego premiums.

What Insurance Does

1. It substitutes certainty for uncertainty. It has been said that "nothing is certain but death and taxes." This epigram is not quite true since nothing is certain but uncertainty. The appalling loss of life on our highways seems impossible to control or even to reduce. But who will be the next victim is uncertain. At this very instant someone's house or barn is being burned to the ground. Whose building will be the next to go is uncertain. Someone is leaving this world before his time. Who will be next?

When an individual assumes these uncertain risks himself, he is taking a gamblers' chance that he will escape. Insurance is the opposite of gambling. By the use of insurance, one can substitute a small but certain payment for a large and possibly disastrous loss. Then if the loss should fall on him, he is insured and will be reimbursed. The event cannot be prevented, but its untoward effects can be neutralized by insurance.

2. It distributes the costs of losses. In effect, insurance is the organizing of a group of people who agree to bear each others losses. They do this by contributing to a common fund the "small but certain payment." From this fund any losses

[6] Selz C. Mayo, and Kie Sebastian Fullerton, "Medical Care in Greene County," North Carolina Agricultural Experiment Station *Bulletin No. 363*, November, 1948.

incurred by members of the group will be met. This is the essence of insurance, whether operated by a large stock company organized to make profits, by a farmers' mutual fire insurance association, or by a mutual life insurance company.

The payment that the members make is called the "premium." Its calculation will be illustrated by the simplest of insurance contracts, that of a farmers' mutual fire insurance association, which operates by assessments. The members have agreed to make up all losses by fire to any member. When a fire occurs, the amount of the loss is determined and divided among the members, each paying his share. However, most premiums are calculated in advance from the experience of the company. The large life insurance companies use the American Experience Mortality Table, which indicates the number of persons per thousand at all ages who are likely to die during the coming year. From this information, the amount of money needed to pay the beneficiaries can be ascertained and the amount of premium calculated—that is the amount that each contract holder must pay at the beginning of the year.[7]

3. It helps in the calculation of costs. Experience has made predictable the total loss to the community from fire, lightning, or accident; but to the individual person or business firm such loss is not predictable. Yet these losses are costs. If each producer (farmer or businessman) is compelled to work alone, he can only guess at his probable loss. The payment of an insurance premium enables him to allocate to cost of production the proper amount for potential losses.

4. It helps in the obtaining of credit. Lending agencies extend credit to farmers with "agricultural value" as security. Part of this value must be, of course, the value of the buildings; the land itself is more valuable when equipped with buildings since it is more productive than the same land would be without buildings. It is imperative that insurance be provided for the buildings on a farm that is used as security for a loan. Then, in case of fire, the farm can be continued as a going concern, for insurance provides the means of replacing the destroyed buildings and protects the lender.

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[7] For details of the calculation of premiums see Riegel and Miller, *Insurance Principles and Practices*, 3rd Ed. New York. Prentice-Hall, Inc., 1947; and A. H. Mowbray, *Insurance*, 3rd Ed New York: McGraw-Hill Book Company, Inc., 1946.

Questions

1. Define risks and insurance.
2. Under what condition can risks be covered by insurance?
3. List some of the risks to which farmers are subject.
4. State some of the ways in which insurance might be of help to farmers.
5. Name the different types or classes of insurance commonly used by farmers.
6. In what ways and to what extent does the Federal Crop Insurance Corporation insure farm crops?
7. To what extent do farmers provide their own insurance?

References

Murray, William G., *Agricultural Finance*, Chapters 6 and 7. Ames: Iowa State College Press, 1947.

Valgren, V. N., "Insuring Through Your Farmers' Mutual," Farm Credit Administration, *Circular E-15*, 1939.

PART V—POLICIES AND PROGRAMS

Trade Barriers and the Farmer
Farmer Organizations
Farm Price Policies and Programs
Farm Price Policies and Programs—Continued
The Brannan Proposals

CHAPTER 22

Trade Barriers and the Farmer

NATIONS have acquired the habit of erecting trade barriers for the purpose of influencing the flow of goods and services in international trade. These barriers have been imposed not to increase trade among nations but to provide some economic advantage to the nation erecting the barriers. The use of this device is by no means confined to international trade. On the contrary, the art is widely practiced by regions or states of a given nation. Indeed, trade barriers may be found in the smallest political subdivision of a country.

The farmer's interest in trade barriers lies in the fact that agriculture is no longer a self-sufficing industry but an integral part of our vast commercial and industrial economy. When agriculture was self-sufficient, trade barriers were of no interest to the farmer for the simple reason that he produced on his farm most of the food, clothing, and equipment he needed. In short, his dependence on commerce was reduced to the lowest terms. However, as soon as farmers began to produce products for sale and to buy large quantities of products of other industries, they became vitally interested in domestic and foreign commerce. The subject of this chapter is the nature of this trade and the farmer's interest in it.

The Nature of Domestic and International Trade

In spite of all attempts to prove the contrary, there is no fundamental difference between domestic and foreign trade. Yet, it is a common belief that domestic trade is desirable and foreign trade is undesirable. A statesman, when asked whether or not he favored domestic over foreign trade, is alleged to have said: "In domestic trade you have both the money and the goods, in foreign trade you have the money but the foreigner has the goods." It is such misconception of foreign trade that has led to the imposition of trade barriers against both foreign

and domestic commerce. To understand the basic nature of this subject it will be necessary to discuss the nature of trade and how it emerges.

1. Basis of trade. Trade, domestic or foreign, consists in the movement of commodities and services from one area to another. It is made possible by geographic differences in productive resources. These differences are of several sorts. One country, or a region within a country, may possess rich mineral, coal, or oil deposits, whereas another country or region may not have any of these, but may have rich agricultural resources. Again, capital may be more plentiful in one country or region than in another. Variations in productive resources may extend also to arts and skills. One country may be especially endowed with craftsmen who possess the "know how," whereas the workmen of another country may be largely unskilled. Indeed, the differences in productive resources are numerous and vary widely from nation to nation and from region to region within the same country.

2. Comparative advantage. Regional differences in productive resources, although they provide the basis for international or interregional trade, do not explain why such trade takes place. The explanation is found in the "principle of comparative advantage." Suppose that the productive resources are so distributed between countries *Y* and *Z* that under no circumstances could either of these countries produce specified products. For example, suppose that *Y* could produce Product *F* but not Product *G*, and *Z* could produce Product *G* but not Product *F*. In this example *Y* has an exclusive[1] advantage over *Z* in the production of *F* and *Z* an exclusive advantage over *Y* in the production of *G*.

It is perhaps obvious in this example that if *Y* and *Z* want both products, they will have to engage in international trade. But all cases of international trade are not so obvious. It may be, and usually is, that the resources of both *Y* and *Z* permit the production of similar, not exclusive, products. The nature of the international trade that will be carried on in the case of similar or alternative products will depend on the relative effectiveness of the resources when used to produce these

[1] The word "exclusive" is used rather than "absolute," since there are no effective substitutes for either *F* or *G*.

similar products. Suppose, for example, that for a combined unit of the productive resources, *Y* can produce 5 units of *A* and *Z* can produce 1 unit of *A*. In this example, *Y* has an absolute advantage over *Z* in the production of *A*. But this fact by itself does not mean anything unless the efficiency coefficients of productive resources are known for all similar or alternative products.[2] It may be that *Y* can produce all of these products much more effectively than *Z*, and yet *Z* will produce some or all of these products.

The explanation of this is to be found in the coefficients of production for each of these similar products in both *Y* and *Z*. This is important because both countries have, at a given time, a limited or fixed amount of resource that can be used in production. This being so, then the question that any country must answer is "How can these limited resources be used, at any given time, to obtain maximum net returns"? Let it be supposed that *Y* and *Z* can produce *A*, *B*, *C*, *D*, and *E* products. But, because of variation in productive resources in the two countries, the coefficient of production in *Y* for each of the products is such that in *Y* they are ranked *A*, *B*, *C*, *D*, and *E* and in *Z* they are ranked *E*, *D*, *C*, *B*, and *A*.

Under free trade, how will the available resources in each country be distributed in the production of these products? The problem may be solved by so distributing the resources in production that the marginal net returns shall be the same for the last unit applied on each product. This is known as the "law of equi-marginal net returns" (see Chapter 8).

It is clear, from the assumed ranking of the products, that *Y* will give first attention to the production of *A*, then to *B*, *C*, *D*, and *E* in the order named. But it does not follow that *Y* will produce all of these products. The argument may be followed more easily by referring to Figures 37 to 39, inclusive. In Figure 37 is shown the behavior of the marginal net returns for each product (that is, *A*, *B*, *C*, *D*, and *E*), as resources are used in their production. Because *A* is the most profitable of

[2] The magnitude of these coefficients will vary with output. In most discussions of this subject they are considered to be constant (that is, 10 units of *A* for each unit of input), but this obviously is an error since the law of diminishing returns would indicate a declining coefficient as more units of resources were applied in the production of *A*. Over time the coefficients will be affected by changes in scale, which may affect the efficiency in the use of resources.

these products, the net returns are larger but decline as more resources are used in its production. This behavior of the net marginal returns is also true of B, C, D, and E. But D and E will not be produced in Y if free trade exists between Y and Z countries. The reason for this is that all the available resources will be used in the production of A, B, and C before the highest net returns on D or E are equal to the last unit applied to A, B, and C (that is, $OQ_3 + OQ_2 + OQ_1$ is equal to total resources available). In a similar fashion, Z applies its resources to the production of E, D, and C (Figure 38).

This distribution of the productive resources would hold if Y could buy products D and E from Z, and if Z could buy B and A from Y. In this event, A, B, D, and E would be certain to enter the channels of international trade. C might also be traded for other products to the extent it is not needed for home consumption.

The allocation of available resources to these products would be different if trade between Y and Z were altered by the imposition of a trade barrier, say a tariff. Suppose that a group of business entrepreneurs in country Y became interested in the production of D, which is now on an import basis. At present all of the resources will be used on the production of A, B, and C. The entrepreneurs interested in D could not bid against the entrepreneurs who are producing A, B, and C to start the production of D. This difficulty, however, could be overcome if the statesmen of Y could be induced to impose an import duty or tariff on D. The import duty must be high enough, however, so that the domestic price of D is sufficient to make its production profitable (that is, so that the producers of D can compete successfully with the producers of A, B, and C for the necessary resources).

What effect would the imposition of such a tariff have on the reallocation of Y's resources? Since the resources are fixed, any shift to D would mean a reduction of resources available for A, B, and C. The nature of the reallocation is indicated in Figure 39 in which the marginal net returns for D are shown both before (DD) and after the imposition of the tariff (dd). Under these conditions, Oq units of resources will be used on D, Oq_1 on C, Oq_2 on B, and Oq_3 on A. This allocation of resources to the production of four products, A, B, C, and D, instead of

three, A, B, and C, reduces the total productivity since resources would be reallocated and (those used on D) would be forced into a lower economic use.

The question immediately arises, "What effect will the imposition of a tariff on D have on the economy of Z?" It is obvious that, since Z will not be able to sell as much of D to Y as before the imposition of the tariff, its production must be reduced. In

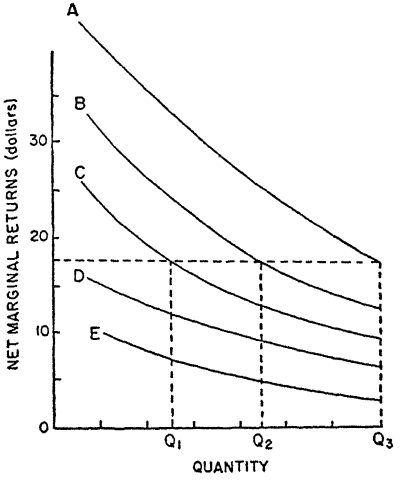


FIG. 37 ALLOCATION OF RESOURCES IN COUNTRY Y

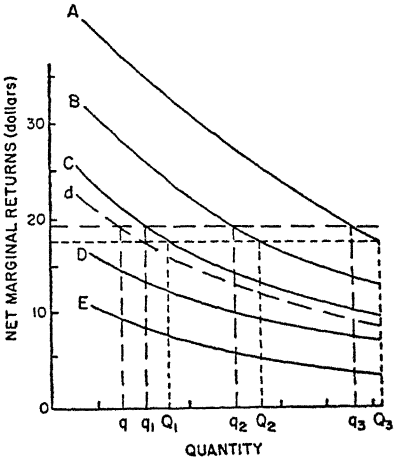


FIG. 38. ALLOCATION OF RESOURCES IN COUNTRY Y.

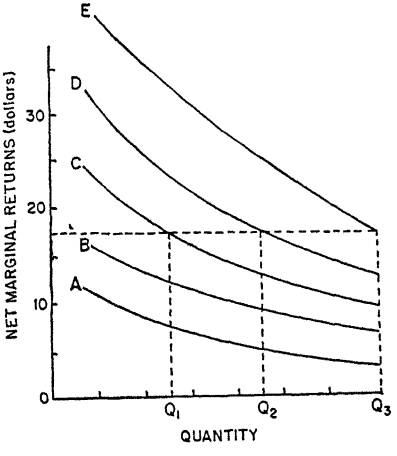


FIG. 39. ALLOCATION OF RESOURCES IN COUNTRY Z.

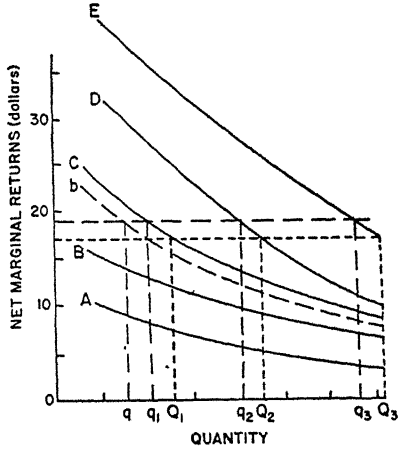


FIG. 40. ALLOCATION OF RESOURCES IN COUNTRY Z.

this event how are Z's resources going to be reallocated? It is possible and quite probable that Z will use its unused resources formerly used in the production of D on the production of B, which was formerly (before the imposition of a tariff on D) imported from Y. Assuming this action was taken, Z would have to impose a tariff on B high enough so that producers of B could compete with the producers of C, D, and E. The reallocation of the resources is indicated in Figure 40, in which Oq is allocated to the production of B, Oq_1 to C, Oq_2 to D, and Oq_3 to E.

The final results of the reallocation of resources in both Y and Z may be stated as follows: Both countries would have less of C to use, Y would have less output of A and B to sell to Z, and Z would have less of E and D to sell to Y. Thus by the simple expedient of imposing a tariff, production in both countries would be reduced.

It would be possible to trace the effect of barriers on trade on the use of resources for a series of countries rather than just two. To do so would put a heavy burden on our sanity and, in the end, might lead to unnecessary pessimism. The general effect, however, would be the same; namely, resources would be put to a lower economic use, and production would be reduced. The fact is that the nations have succeeded admirably in confusing world commerce by the imposition of numerous trade barriers.

1. Effects of barriers on specific products. It is much easier to trace the effects of trade barriers in theory than in fact. Yet from time to time students of international trade have attempted to evaluate the effect of barriers on specific products. In 1933, in response to a Congressional request, the Secretary of Agriculture, Henry A. Wallace, submitted a report entitled "World Trade Barriers in Relation to American Agriculture.' This report deals chiefly with conditions in 1930-32. In summarizing its findings the report contains the following statement:

> Trade barriers and related measures, as part of these complex forces, have aggravated the agricultural depression. Carried to the levels reached in the past several years, these barriers create a strong incentive for the raising of further barriers. Hence, the area of governmental intervention has been greatly widened until no country remains wholly outside. Restrictions upon trade have been greatly intensified, and it

is increasingly apparent that actions intended for the advantage of individual countries are resulting in cumulative damage to the trade and prosperity of all [3]

That trade barriers generally depress, rather than stimulate, agriculture is found in conditions following the passage of the Tariff Act of 1930 in which import duties were raised on many farm products. The object of Congress in raising tariff duties was to enhance the prices of farm products. This effect did not occur. An index of all farm prices shows the following pattern from 1928 to 1934 inclusive: 149, 146, 126, 87, 65, 70, and 90. Other factors, of course, caused the drop in prices, which the increase in tariffs in 1930 failed to stop.[4] As a corollary to this statement, high tariffs do not assure farm prosperity. On the contrary, prices received by farmers follow closely the pattern shown by both imports and exports. In other words,

TABLE 32

FARM PRODUCTS THAT SHOW AN IMPORT OR EXPORT BASE*

Imports	*Exports*	
Rye	Wheat†	Oranges and grapefruit
Sugar	Corn‡	Peaches and pears
Peanuts	Oats†	Potatoes
Lemons and limes	Cotton	Pork products (lard)
Wool	Tobacco	

* Source: *Agricultural Statistics*, 1948.
† Showed slight imported balances for years 1934 to 1936

farm prosperity increases when trade increases and not as the result of a restrictive protective tariff.

A common mistake in regard to the tariff is the assumption that it affects all farm products in the same manner. Agriculture in a nation as far-flung as the United States is a varied industry. Geographic specialization creates products that enter trade on different bases; some are largely exported, whereas others are chiefly on an import basis. The nature of the surplus, whether import or export, is shown for several products in Table 32.

[3] "World Trade Barriers in Relation to American Agriculture," Report of the Secretary of Agriculture, 1933, p. 11.

[4] "Index Number of Prices Received by Farmers," p. 22 (Base (1909-1914) = 100). United States Department of Agriculture, 1948.

The implications of this situation should be obvious. Those farmers who produce for export receive no protection from a protective tariff. At the same time, they buy great quantities of goods produced and sold under protection. The prices of these goods that they buy are higher for the very reason of the tariff. Thus, it happens that farmers producing export commodities, such as cotton and flue-cured tobacco, are under a disadvantage by the imposition of tariffs. The situation is quite different for those producers of products that are on an import basis. The domestic price of such products tends to be higher and usually by the extent of the tariff. Nevertheless, these farmers, as well as those who produce for export, are denied the advantage of buying in the cheapest and most efficient markets and are given in exchange wholly illusory benefits.

Barriers Designed to Affect Foreign Trade

Barriers designed to affect foreign and domestic commerce are not restricted to tariffs but include an array of devices that, apart from their effect on trade, stand as monuments to man's ingenuity and rascality. A description of these barriers may both amuse and depress the reader.

1. Import restriction. In the past import duties on tariffs were the chief means of influencing international trade. However, between World Wars I and II a number of new methods were devised and put into effect. The more important of these are presented.

a. Linked purchases. The use of this device requires that, when an importer buys a commodity from a foreign country, he must at the same time buy in the domestic market a specified amount of a product that competes with the imported article. In some cases, it is required that the imported and domestic articles must be mixed in a specified ratio. In many European countries, for example, millers are required to include in their grist a certain, and very often a very high, percentage of domestic-produced wheat.

b. Import quotas. To regulate imports some countries have used various types of import quotas. When this method is used, imports of specified commodities may be limited to fixed amounts in any one year. When a tariff is already in effect,

a country may use what is called a "tariff quota" method. This means that a specified amount of a commodity is permitted to be imported at a low tariff or in some cases free of duty, but any amount above this is subjected to a high tariff. A more restrictive form of control is the "unilateral quota." In the use of this device, the total quantity to be imported is fixed for the year. The quantity to be imported may be allocated in advance among the countries from which the commodity is usually obtained. Or it may be global, in which case the commodity may be obtained from any country up to but not exceeding the total annual quota.

To enforce the import restrictions, countries usually resort to licensing and/or the creation of import monopolies. Under the licensing only those permitted to import are given licenses. In the event that import monopolies are created, only these are permitted to engage in international trade.

c. Exchange quotas. When international trade of any country is free or unrestricted, importers and exporters are free to buy or to sell currencies of any other country and in such amounts as may be needed. But this freedom may be modified or restricted if a nation wishes to affect the flow of goods in international trade. In this event a country may assume full control of the trade or traffic in the purchase or sale of foreign exchange by its nationals. This control may be attained by the simple device of requiring all persons, exporters, and others who have any claim on foreign countries for goods already sold to deliver these claims to a government agency set up for this purpose. Once such a control is established, the government may then dictate to its nationals how such claim may be employed. If, for example, a country wishes to restrict its imports, it may limit the amount of foreign exchange that may be used in the purchase of that specific commodity.

2. Export aids and restrictions. Nations engaged in international trade usually discover that import restrictions have a damaging effect on exports. Thus any immediate favorable effect that may be gained by restrictions on imports is soon offset by a decline in exports. The principle in effect here is that exports depend upon imports. When exports begin to decline, because of restricted imports, nations then turn to

devising means of aiding exports without giving up their protective policies. Today there are four methods of aiding export industries.

a. Commercial treaties. Negotiation of commercial treaties and agreements is one of these methods. This method forms an important part of the tariff policy of every nation, and is aimed to secure a favorable market for exports by moderating trade restrictions in other countries. It may or may not involve an active policy of tariff bargaining, but more commonly it does. The concessions which governments attempt to secure from each other in regard to trade barriers may be either exclusive or generalized. Examples of exclusive concessions may be found in the tariff preferences granted by the United Kingdom to the British Dominions, which allow agricultural products from the Dominions to enter the United Kingdom at a lower rate of duty than similar imports from other countries, or admit Dominion products free of duty while a duty is charged on products from other sources In the case of generalized concessions, one country agrees to lower its tariff duties on a product or products in which the other country is vitally interested and the reduction is applied to the products affected regardless of the source from which they are imported.

b. Dumping. Another method of encouraging agricultural exports, or of increasing the returns to producers of agricultural commodities on an export basis, is the selling of an agricultural product in the world market at a price lower than that prevailing in the domestic market. This may be done either through an export bounty or through a monopolistic control of marketing which permits producers to receive a higher price on that part of the output which is sold in the domestic market than on the exported part. Such monopoly controls are usually set up through direct government intervention.

c. Standardization of commodities. Measures tending to improve or standardize the quality of exports are a third means of aid. Such measures are in effect in many countries. The standardization and grading work by the United States Department of Agriculture is an important example. There are, however, cases in which much more drastic measures have been applied to agricultural exports by foreign countries. In Denmark, for instance, the quality of agricultural products exported is subject to careful control both by the cooperative marketing organizations and by the government.

d. Restriction on exports. . . . a fourth method of aid, has been used to maintain world prices of certain commodities of which the production or supply is largely concentrated in one country. This has been practiced or at least attempted in several tropical products such as rubber, coffee and henequen. In cases where no one country has a natural monopoly, it is possible to some extent to raise or maintain the world price by restriction of exports through international agreement, if all the important producing countries can be induced to enter and adhere

to the necessary agreements. Thus far this has been done only in the case of sugar.[5]

3. Production aids and restrictions. Wallace's report to Congress also states:

A third group of measures, overlapping to some extent with the foreign trade control measures just described, includes those applying directly to production as such. Most of those now in effect are either intended, or at any rate tend, to increase production. Examples include the exercise in Soviet Russia of complete authority over all agricultural production as a phase of the economic planning adopted in that country; intervention in the form of compulsory farm-management, as in Italy and Spain; and "regulated stimulation" of production of particular crops, as in the case of the state tobacco monopolies of various countries, and the British and Netherlands wheat acts. Other aids, involving little or no actual regulation of production, include numerous production bounties and all those trade control measures tending to stimulate production in the country applying them. Some attempts have been made to restrict production, either singly or as a phase of export restriction. Examples include coffee, rubber, henequen, Egyptian cotton, tea, sugar (in certain countries participating in the international sugar agreement), and hogs (in the Netherlands).[6] (See Figure 41.)

4. International commodity agreements. This is an old method designed to affect trade between nations. There were, for example, agreements in effect prior to 1930 in rubber, coffee, and sugar. (See 2, *d*.) Agreements of this type, however, differ from commercial treaties or Reciprocal Trade Agreements in that they are designed to reduce trade barriers generally, and tariffs specifically. International Commodity Agreements, on the other hand, are directed to control specific commodities. This method has come into prominence in "The International Wheat Agreement of 1949" involving Argentina, Australia, Canada, United States, and Great Britain. This agreement provides for controls over exports, production, prices, and reserves.

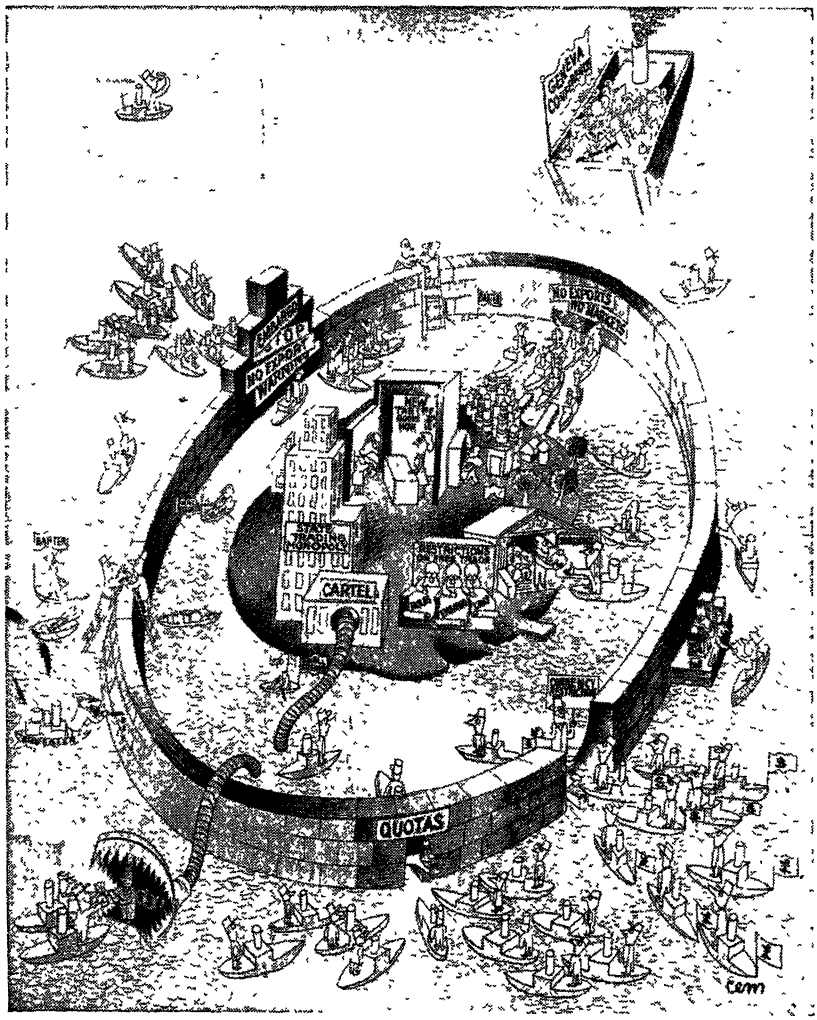
a. Export control. The amount of grain wheat that shall be permitted to move in international trade, for any given year, is determined by deducting from the latest estimate of the world's volume of wheat "the export quotas established for

[5] "World Trade Barriers in Relation to American Agriculture," Report of the Secretary of Agriculture, 1933, pp. 2, 3.

[6] *Ibid*, pp. 3, 4.

non-signatory exporting countries." The export control quota for 1949 was divided among the signatory countries as follows: Argentina, 25 per cent; Australia, 19 per cent; Canada, 40 per cent, and the United States, 16 per cent.[7]

b. Production controls and reserves. To prevent a demoraliza-



Drawn for LIFE *by Charles E Martin* © TIME, *Inc*

FIG. 41. VARIOUS TYPES OF INTERNATIONAL TRADE BARRIERS.

[7] Stephen Enke and Virgil Salera, *International Economics*, Chapter 21. New York: Prentice-Hall, Inc., 1947.

tion of the world wheat market, the control of the output of wheat is essential. The powers, therefore, agree to control production by such means as may be necessary so that the total output in any one season will be sufficient for domestic consumption, basic export quotas, and reserve for emergencies or for national security. In this agreement the four powers mutually agree and pledge that these reserves will not fall below or exceed the following in millions of bushels: Argentina, 35-130; Australia, 25-80; Canada, 80-275; and the United States, 150-400. Stocks in excess of the upper limits agreed to must be disposed of as feed and for other uses rather than as wheat for flour.

c. Prices. One of the major objectives of international commodity agreements is to set prices so that "reasonable" returns will be made by the producers of the specific commodities. At the same time, prices should be "fair" to consumers also. In order to give more concrete meaning to the terms "reasonable" and "fair," commodity agreements should encompass not only exporting countries, but also the importing customer countries; these two groups together are supposed to work out these agreements, and not the exporting countries alone, as was formerly the case.

The other primary objective of commodity agreements is the stabilization of world market prices for specific commodities. In the case of the International Wheat Agreement, price floors and price ceilings were agreed upon in order to keep the price fluctuations of wheat between these limits. The importing countries guarantee to purchase from the exporting countries, when requested by them to do so, designated quantities of wheat at the minimum prices established by the agreement. Conversely, the exporting countries guarantee to sell to the importing countries, upon request of the latter, designated quantities of wheat at the maximum prices established by the agreement. The maximum prices agreed upon were a flat $1.80 per bushel in each of the four years from 1949/50 through 1952/53. The minimum prices were put on a sliding scale moving downwards from $1.50 in 1949/50 to $1.20 in 1952/53.

d. Quotas. The amounts of wheat that the importing countries can request for delivery under maximum prices were agreed

upon by about forty countries. These quotas remain unchanged during the four years of the agreement. Thus the United Kingdom will be able to import annually 177 million bushels, Italy 40 millions, India 38 millions, the Netherlands 26 millions at $1.80 per bushel, even though the free market price moves above that price. Conversely, the United States can ask the importing countries to take annually 168 million bushels of wheat at $1.50 per bushel in 1949/50, at $1.40 in the following year, and so on, even though the world market price may be lower than these agreement prices. The corresponding quotas for Canada, Australia, and France are 203 millions, 80 millions, and 3 millions. It is important to note that Argentina did not sign the agreement.

e. Relief pool. Again the wheat agreement provides for 100 million bushels of wheat, known as the "relief pool," to be distributed to war-stricken countries. Such pools may be augmented, during any one year, by the exporting countries.

f. Administration. International trade agreements are administered by a committee or council. Such a governing body is empowered by the associated countries to perform specific duties. In the wheat agreement, among the functions and powers of the council are: to establish rules and procedures; to keep such records as are specifically required and other records needed; to carry out the terms of the agreement; to prepare and publish an annual report of its activities; and to establish an executive committee, an advisory committee on prices, and a secretariat, or a staff of experts, to do the work of the council.

g. Appraisal. It is impossible to appraise accurately such agreements in advance of performance. The difficulties confronted are always of considerable magnitude and complexity. A somewhat similar wheat agreement was written in 1933 but failed to function because the countries involved would not make the necessary concessions. One student of this subject observes:

> International commodity agreements (ICAs) of various kinds, as well as looser commodity "arrangements," will have a place in this international economic collaboration. As yet, however, it is by no means clear how large a place they can fill, or just what it is. Prewar experience with ICAs, though much more limited than is generally realized, furnishes more warnings than guidance. Contrary to impres-

sions often conveyed, relevant ideas evolved before and during the war have yet to be worked out in detail, integrated, and tested [8]

The Future of International Trade

As nations acting in good faith have discovered, eliminating or even reducing the impediments to international trade is a difficult task. Yet, it seems clear that the freedom of trade is necessary if the varied but widely distributed resources of the world are to be used most effectively in the production of goods and in the rendering of services. Because each nation has assumed, selfishly, that the resources under its control shall be used, first, for the benefit of its own nationals and, second, for those of other nations, attention has been directed not to a direct attack on barriers *per se* but rather to get the various nations of the world interested in a more effective and a fuller use of its own resources. In the event that this should become the major objective of all or any effective block of nations, it could not be achieved by reliance solely on their own resources. That is, to fully exploit its own resources for its own nationals, each nation would have to use, at least to some extent, the resources of other nations. Thus, over time there would develop among nations a sense of interdependence that would lead to the general abandonment of trade restrictions.

How this sense of interdependence is to be achieved is a vital question. In all highly commercial nations the chief problem is to keep their nationals fully employed. Unemployment is a spectre that haunts all responsible governments, and its avoidance has already become the chief concern of all advanced nations. Alvin H. Hansen has stated admirably the case for a high level of employment as a necessary condition to the elimination of trade barriers.

> . . . When employment and prosperity are high, trade has flourished even though hampered by tariffs and other restraints on trade. Domestic high employment and prosperity can override fairly serious obstacles to trade and have, in fact, despite these obstacles, produced a high level of international trade. Moreover, the condition of full employment is favorable for the removal of excessive barriers to world trade.

[8] Joseph S. Davis, "International Commodity Agreements: Hope, Illusion, or Menace?" The Committee on International Economic Policy in Cooperation with the Carnegie Endowment for International Peace, January 1, 1947.

Without high levels of employment and purchasing power, the real motive force behind international trade is lacking.[9]

If this thesis is correct, how then may a high world-wide level of employment be achieved and maintained? This important and strategic question was considered by the only effective world-wide organization, namely the United Nations Organization. Out of the discussion, four ways were developed by which international full employment might be encouraged: (1) International Bank for Reconstruction and Development; (2) International Monetary Fund; (3) International Trade Organization; and (4) The Food and Agriculture Organization.

1. International Bank for Reconstruction and Development. This agency, created July 22, 1944, is designed to promote (1) the economic recovery of those nations whose economies were adversely affected by World War II and (2) the economic development of backward countries. To accomplish these tasks, the Bank is provided with basic capital of 10 billion dollars, which is subscribed by the 46 participating countries. At the outset, 20 per cent of these funds was made available to the Bank (2 per cent of the 20 per cent in gold or United States dollars and the remaining 18 per cent in currency of each of the participating countries). The remaining 80 per cent will be subject to call as the Bank needs additional funds. This share of the capital assigned to each nation is roughly in proportion to its participation in world commerce. The obligation of the United States is 35 per cent of the 10 billion or 3.175 billion dollars.

It is possible under the Bank's Charter to supplement these basic funds by (1) guaranteeing private loans designed to promote the objectives for which the Bank was established and (2) borrowing in the markets of the participating nations.

The operation of the Bank is expected to affect international trade in several important respects. They are: (1) to achieve a greater interdependence of the economies of the participating countries; (2) to assist in creating conditions that are essential to full employment on national levels by (*a*) establishing uniform and reasonable interest rates, (*b*) directing the flow of capital and skills (the know how) to underdeveloped countries,

[9] Alvin H. Hansen, *America's Role in the World Economy*, p. 152. New York: W. W. Norton & Co., Inc., 1945.

and (*c*) distributing loans so as to promote the orderly development of a balanced world trade and thus prevent any nation or block of nations from capturing a large block of the world's commerce to the detriment of smaller nations.

2. International Monetary Fund. To further facilitate the growth and development of an orderly and a well-balanced international trade, the nations that participated in establishing the International Bank provided also an International Monetary Fund of 9 billion dollars. This Fund is to be contributed by the participating nations, of which the United States, the United Kingdom, and Russia collectively contribute 5.25 billion in terms of United States dollars. The Fund is to be used primarily to accomplish three things: (1) to stabilize the value of the currencies of each of the participating countries in terms of each other, or what is termed "par value of exchange." These par values "shall be expressed in terms of gold as a common denominator or in terms of the United States dollar." The stabilization of the currencies is to be attained by prohibiting any participating nation from changing the value of its currency in terms of gold without the consent of the management of the Fund and then only "to correct a fundamental disequilibrium";[10] (2) to eliminate existing exchange controls and to prohibit the establishment of new controls; (3) to lend to any participating nation the currencies of another nation that it may need to relieve a temporary but embarrassing shortage of such currencies.

These functions of the Fund are designed to promote international trade by eliminating some of the chief obstacles associated with international finance and especially those that, in the past, have tended to stifle foreign trade.

Commenting on the importance of the Fund, Hansen states:

> The orderly adjustment of exchange rates to the requirements of internal stability and full employment offers the means by which we can achieve at one and the same time both internal stability and full employment and, on the other hand, international stability and a high level of world trade. It is not difficult to see that a high level of world trade can only be achieved when the various countries have high levels of business activity and employment at home. It is also not difficult to see that the orderly adjustment of exchange rates promotes both

[10] Disequilibrium is not defined in the articles of agreement but is assumed to mean a condition of trade that tends to deplete the gold or foreign exchange reserve of a participating nation.

internal and international stability. The orderly adjustment of exchange rates does not mean that one country undercuts another. On the contrary, it means an exchange rate that keeps every country in an appropriate balance with the rest of the world. An orderly adjustment of exchange rates means that no country will be permitted to take an unfair advantage of other countries in foreign-exchange markets It means the fixing of exchange rates so that the various countries will be on a fair competitive basis one with the other. Since the artificial advantage of competitive currency depreciation will not be tolerated, each country must face the world market in terms of efficiency and productivity. Each country will be able to sell those products in which it has the highest economic efficiency in terms of human skills and natural resources.[11]

3. International Trade Organization. The Charter of this organization has already been drafted. It provides a "code of principles" to be followed in regulating international trade. The most important elements in this code to which member nations subscribe are as follows:[12]

a. Reduce import tariffs and eliminate tariff preferences.
b. Limit the use of all indirect forms of "protectionism, such as discriminatory internal taxes, mixing regulations, and arbitrary and concealed barriers in the guise of customs regulations" (p. 6).
c. Limit the use of quantitative restrictions, and where used shall be subject to "international scrutiny and control" (p. 6).
d. Eliminate discriminatory treatment now practiced by nations in international trade.
e. Regulate private and public international cartels, state trading enterprises, and commodity agreements.
f. Limit the use of export subsidies, by consultive agreements.
g. Take such means as may be needed to develop noncommercial countries.

The Charter provides for certain so-called "exceptions" to the code:

a. When any nation is having difficulty in balancing her international payment account, she may use "quantita-

[11] Alvin H. Hansen, *America's Role in the World Economy*, pp. 47-48. New York: W. W. Norton & Co., Inc., 1945.
[12] All citations, unless otherwise specified, are from Document 61, 81st Congress, 1st Session, 1949.

tive restrictions" to limit her expenditures of foreign exchange.

b. When export tariffs are required to prevent "injury" to a domestic industry, a nation may continue such tariffs.

c. Domestic production may be limited if this method is needed to "prevent the disastrous effect of surplus products."

d. The code restrictions may be ignored at any time that national security should require the abandonment of some or all code restrictions.

It would appear that these exceptions would negate the positive requirements of the Charter. But all of these exceptions will be "subject to scrutiny of the I. T. O." Tacitly, this means that any member nation would have to show cause to take advantage of these exceptions. This would at least act as a deterrent to any nation that might use this way to obtain for herself some special advantage.

4. Food and Agriculture Organization. There are other elements that are perhaps more fundamental to world trade than those that have been discussed, namely: rural poverty, malnutrition, and ill health among the peoples of the earth. The Food and Agriculture Organization of the United Nations is chiefly, although not solely, concerned with these three conditions. These are admittedly difficult problems; nevertheless, 57 nations have agreed, under the FAO, to unite in making an attack on them. Primarily, attention is directed to: (1) giving technical assistance to member governments to help them produce more food, fibers, and timber; (2) promoting concentrated international action by recommending definite ways and means for putting the latest facts and methods into use; and (3) providing basic facts on the ever-changing food and agricultural situation to enable member governments to formulate their production plans.[13]

These methods, no doubt, are helpful in providing the physical basis by which the nations of the world may abolish rural poverty and eliminate malnutrition and ill health. But more direct action would appear to be desirable. To this end, Sir John Orr,

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[13] "Facts About Food and Agriculture Organization of the United Nations," Washington, D. C., 1948.

first Director General of this Organization, made the following proposals:

a. International agencies would be set up through action of interested producer *and* consumer nations for designated commodities with a large volume of world trade.

b. These agencies would offer to buy if the price of an agricultural commodity (for example, wheat) fell below a certain "floor" price and to sell if the price rose above a certain "ceiling" price; the differences between these prices should cover handling charges and storage.

c. "Floor" and "ceiling" prices were to be arrived at by establishing an average, or "standard" price, the level of which should equate supply and demand over the long run and not allow high-cost producers to stay in production.

d. Reserves should be held internationally and administered by agencies responsible to international organizations alone (for example, the FAO or UN), and *not* to individual governments.

e. In addition to stabilization reserves, "famine" reserves should be created out of which surpluses could be sold at special prices, the difference between the commercial (buying) price and the special price to be absorbed by the holding agencies of the stabilization reserves.

More recently, similar proposals, collectively known as the World Food Bank, were advanced by Director General Norris E. Dodd. But both sets of proposals were rejected by the United States Government, which is more interested in commodity agreements among governments than in the direct and united attack as proposed by the FAO.

Although these various agencies, which have been created recently, have still to be tested, they collectively provide new and promising methods of attack on the old and troublesome problems associated with international trade. In time, they may achieve the age-old hope—a free international trade—and in so doing they may lay the foundation of permanent peace and prosperity among the nations of the world.

Questions

1. Why should farmers be interested in trade barriers?
2. Give some of the reasons for the existence of international trade.

3. Explain briefly what the term "comparative advantage" means when applied to international trade.
4. What effect do trade barriers have on the use of resources of nations engaged in international trade?
5. What effect do trade barriers have on prices of (*a*) commodities on an import basis and (*b*) commodities on an export basis?
6. Name some types of trade barriers designed to affect foreign trade and explain how each is to be imposed.
7. Specifically, what are international commodity agreements?
8. What new indirect attack has been made on trade barriers?
9. How do the following agencies affect international trade: (*a*) International Bank for Reconstruction and Development, (*b*) International Monetary Fund, (*c*) International Trade Organization, and (*d*) Food and Agriculture Organization?
10. State your opinion as to the over-all effect that the agencies mentioned in Question 9 may or would have on trade and peace.

References

Auld, George P., *Rebuilding Trade Tariff Bargaining*. National Foreign Trade Council, Inc., and the National Foreign Trade Association, 1936.

Bunce, Arthur C., *Economic Nationalism and the Farmer*, Chapters IV-VIII. Ames: Collegiate Press, Inc., 1938.

Enke, Stephen, and Salera, Virgil, *International Economics*. New York: Prentice-Hall, Inc., 1947.

Ellis, Howard, *A Survey of Contemporary Economics*, Chapter 6. Philadelphia: The Blakiston Company, 1948.

Peek, George N., and Crowther, Samuel, *Why Quit Our Own*, Chapters XIII-XIV. New York: D. Van Nostrand, 1936.

Schultz, Theodore W., *Vanishing Farm Markets and Our World Trade*. New York: World Peace Foundation, 1935.

Tarshis, Lorie, *The Elements of Economics*, Chapter 40. Boston: Houghton-Mifflin Co., 1947.

Taylor, Henry C., and Anne Dewees, *World Trade in Agricultural Products*, Chapter XV. New York: The Macmillan Company, 1943.

CHAPTER 23

Farmer Organizations

THE THREE largest and most influential farmers' organizations in the United States, in the order in which they appeared on the national scene, are The National Grange, the Farmers' Education and Cooperative Union of America (usually called the Farmers' Union), and the American Farm Bureau Federation. There are a number of smaller or more specialized organizations, but these three are the nationally heard voices of the farmers.

In this chapter brief consideration will be given to a few farm groups other than the big three, insofar as they were important in the evolution of an organized agriculture. The discussion will proceed within the following framework: (1) historical background and the need for farmer organizations; (2) formation of the farm groups, membership strength, and growth from their origins to the present; (3) critical examination of programs and influence of the big three farmer organizations; and (4) some general considerations on the place of farmer organizations in modern society.

Early Scientific Agricultural Societies

Although the growth of the farmer organizations in the United States is often said to date from the period of agrarian unrest following the Civil War, it actually began much earlier. The early organizations included the South Carolina Agricultural Society (1784), the Philadelphia Society for the Promotion of Agriculture (1785), the New York Society for Agriculture, Arts, and Manufacturers (1781), the Massachusetts Society for Promoting Agriculture (1792), and many more. These were aristocratic societies, composed mainly of the leaders of the community. For example, Albemarle Agricultural Society (Virginia, 1817), had Thomas Jefferson as one of its founders; also included among its thirty founders were two future governors of Virginia, a future United States Senator and Ambassador

to Great Britain, a future Justice of the United States Supreme Court, a brigadier general, and a future President of the University of Virginia.

Scientific agricultural societies grew so rapidly that by 1860 there were 941 active groups in the United States. Accompanying this growth was a broadening of the popular base of the organizations and a consequent tremendous increase both in membership and influence. These societies, however, were still primarily directed toward "the dissemination of general scientific information" and related ends.

Political and Economic Awakening of Farmers' Organizations

The primary aim of the early farm organizations, to disseminate technical information, was almost completely overshadowed in the organizations that were founded in the decades following the Civil War. From scientific groups, the farmer organizations became fraternal, political, and economic pressure groups, or legislative engineers according to the present-day euphemism, with the avowed purposes, first, of protecting and later, of furthering, the special interests of agriculture. These objectives assumed a divergence between the common welfare of all the people and the welfare of agriculture.

To understand this cleavage in points of view and to appreciate its significance, it will be necessary to trace what has happened to industry and labor. Before 1790 the chief property owners had been the farmers (including the great landed proprietors) and the merchants. With the unprecedented development of manufacturing and industry and with the rise of pre-eminence of the corporate form of business organization, several new socio-economic groups crystallized. The Beards list six new groups of enterprisers that became important during this period: "Manufacturers, specialized inventors, industrial bankers, capitalists pure and simple, corporation lawyers, and industrial managers."[1] Accompanying this economic revolution were an accelerating tendency toward concentration of the control of industrial productive capacity in a few hands and the appearance of a dependent wage-earning group from which emerged the labor movement in the United States, beginning among

[1] Charles A. Beard and Mary R. Beard, *Basic History of the United States*, Chapter 13. Philadelphia: The Blakiston Co. (The New Home Library Edition), 1944.

skilled craftsmen as early as 1792, when the shoemakers of Philadelphia united to form one of the first unions. Other craftsmen (such as printers and machinists), joined by pioneer groups of the new industrial wage-earning class (such as weavers), soon followed with their own organizations. By the end of Andrew Jackson's administration (1837) most of the leading trades and several wage-earning groups in industry in the large cities were organized. The organizations broadened continually; in the decade following the Civil War several national unions were formed, including the locomotive engineers, the machinists, the miners, and others.

In 1866 the first attempt was made to bring the several national labor organizations together into a national federation, the National Labor Union. The Knights of Labor followed in 1869, but it was not until 1881 that an enduring national federation was formed. This was the American Federation of Labor, under the leadership of Samuel Gompers, who remained its president, with the exception of one year, until 1924.

With the concentration of industrial control and the organization of labor itself, farmers likewise became aware of their need for a means of using their collective strength to achieve their economic objectives. This need became especially pressing soon after the end of the Civil War. Prices of farm products had been high during the war, but the cessation of hostilities and the financial policies of the government soon sent them plummeting. Since farmers in general were debtors, this postwar increase in the value of the dollar hit them especially hard. The serious economic stresses of the period also aggravated the farmers' long-standing resentment against abuses of monopolistic power, which had been increasing since the beginning of the industrial revolution three-quarters of a century before. Farmers were therefore ready to espouse any group that promised quick relief.

Early Farmer Organizations

There were many farm groups formed during this early agrarian unrest. The Iowa Farmers' Protective Association was organized in 1881 to fight patent monopolies, especially those involved in manufacture of barbed wire. Farmers paid royalties for use of barbed wire; but, since the patent rights had

not yet been decided, frequently the royalty for use of a given piece of wire had to be paid to several claimants. This may seem trivial today, but to the farmers of the unfenced Middle West of that day it was of great importance.

In Lampasas, Texas, in the late seventies, one of the first of many farmers' alliances was formed for "catching horse thieves, recovering estrays, and buying supplies."[2] The Grand State Alliance of Texas, organized in 1878, was almost destroyed by dissension over the use of greenback. It then recovered by giving its attention to a fight against crop liens, low prices, and oppression by country merchants. This group also espoused many of the ideas that later became planks in the Populist Party platform. These included taxation of speculative landholdings, ban on alien landowning, prohibition of futures trading, higher tax on railroads, and more paper money. In 1887 this group merged with the Farmers' Union of Louisiana under the name of National Farmers' Alliance and Cooperative Union of America, of which the Farmers' Union is a direct descendant. There was also the Colored Farmers' National Alliance and Cooperative Union, founded in Houston in 1886 and boasting a membership of over a million members by 1890.

Two organizations were set up in Arkansas in 1882, the Brothers of Freedom and the Agricultural Wheel. The latter was by far the more important of the two. The Agricultural Wheel, organized as a debating society, made one of the early attempts to gain the support of labor. Little success was attained, however, and in 1889 it united with the National Farmers' Alliance and Cooperative Union of America (commonly called the Southern Alliance) to form the National Farmers' Union and Industrial Union. This organization, making an open bid for labor support and working closely with such farm groups as Benjamin R. Tillman's South Carolina Farmers' Clubs, grew rapidly until in 1890 it reported a membership in excess of a million persons.

At about the same time another alliance was taking shape in the Northwest. It was officially named the National Farmers' Alliance but was commonly known as the Northwestern Alliance. Others were the Farmers' Alliance, begun in New York

[2] Fred A. Shannon, *The Farmer's Last Frontier*, p. 311. New York: Rinehart & Company, Inc., 1945.

around the turn of the century is to be found in economic developments. The nation's farmers were emerging from the dark ages of a long series of depressions into one of the "golden eras" of American agriculture. The causes of agrarian discontent were removed by returning prosperity. Moreover, the organizations had inadequately met the economic problems of their day. It has been said that "the fundamental occasion for the failure was the unsound economic thinking which permeated the advices at the beginning. They had delivered broadside shots at evils in general and they hit nothing in particular."[3]

Although the Populist Party represented the last attempt of farm groups to enter politics directly on a national scale, the agrarian movement has survived. Various organizations have been formed to emphasize the value of economic cooperation and indirect political action through endorsement of candidates of the existing major parties. Farm groups in some of the Northwestern states continue to send a few Representatives to almost every Congress, but they are practically impotent in national politics. Farm strength comes from supporting candidates of the existing major parties.

The Grange

1. Origin and early history. The Grange, founded in 1867 by Oliver Hudson Kelly to ". . . disseminate useful knowledge, and to develop a more general and effective organization of communities engaged in rural pursuits," took the lead in the anti-monopoly campaign of the farmers.[4] Although the Grange constitution forbade discussion of politics, this did not mean that no position could be taken by the members individually on the controversial economic and political issues of the day. Adjournment of Grange meetings was frequently followed immediately by the calling to order in the same place of a political meeting made up of the same persons. The Grange membership thus soon became the voice of the farmers in the fight against monopoly, especially against the railroads.

Generous grants of land had been made by the government

[3] Benjamin H. Hibbard, *Marketing Agricultural Products*, p. 229. New York: D. Appleton-Century Co , 1921.

[4] *Ibid.*, p. 196.

to the railroads, with the object of hastening the settlement of the West by facilitating railroad construction and transportation. Since about two-fifths of the construction costs of the railroads had been covered by these land grants, plus other forms of subsidies, the farmers argued that the railroads were a public trust. Under Grange pressure, the State of Illinois, in 1870, passed the first acts, establishing maximum passenger rates, forbidding discrimination in freight rates, and creating a railroad and warehouse commission with considerable power. Included in the power of the warehouse commission was the very important power to force railroads to handle grain, not only from railroad-controlled, but also from independent, elevators. The Illinois example was soon followed by Iowa, Wisconsin, Minnesota, Georgia, California, and others. The railroads at first ignored this legislation, but, in *Munn v. Illinois* (1875). the United States Supreme Court upheld the Granger laws by recognizing the right of a state to regulate the charges made by common carriers. The Interstate Commerce Commission was organized in 1887 as one result of the Granger activities.

The success of the Granger movement attracted members in unprecedented numbers so that from zero in 1867 membership rose to a peak of something above 1,500,000 in 1874.

During the early period, Grange-sponsored cooperative buying and even manufacturing were frequently attempted. The state agent of the Grange would bargain with a manufacturer for a given number of items, such as farm implements, to be taken during a season at an agreed price. Volume of over a half-million dollars a year in one state (Iowa in 1874, for example) was not uncommon, and savings were estimated at 30 per cent, going as high as 50 per cent on some items.[5] When satisfactory arrangement could not be made for purchasing, some of the state Granges, notably Nebraska, Michigan, and Iowa, began to manufacture such items as harvesters, cultivators, twine binders, and other equipment. Insufficient capital, poor merchandising, and weak hold upon the membership soon brought about the collapse of these undertakings.

Cooperative stores were also tried, but they "lost by succeeding." That is, they compelled local merchants to meet their prices, but they lost their hold on their own people, who

[5] *Ibid.*, p. 203.)

then saw little reason for buying from Grange stores. Failures were also encountered by Grange warehouses, elevators, shipping associations, and similar activities that were attempted. Inexperience, lack of capital, and attempts to do too much too rapidly are said to have been the reasons for most of the failures.[6]

2. Organization of the Grange. The organization of the Grange for adults is on four levels: Subordinate, Pomona, State, and National. Local units, known as the "Subordinate Granges," numbered about 8,000 in 1947, with an average membership of over 100 persons. Total Grange membership was about 900,000. Regular meetings include a business session, which is restricted to members, and an educational program, which is frequently open to the public. Subordinate Granges are grouped, usually on a county basis, into "Pomona Granges," which ordinarily meet quarterly.

In addition to the adult Grange, there is the Juvenile Grange, which has its own ritual and degree work. Each unit of the Juvenile Grange is under the direction of an adult selected by the Subordinate Grange in the area. Most of the young Grangers graduate into the adult Grange when they reach fourteen years of age. The next level in the organization is the "State Grange," a delegate body representing Subordinate and Pomona Granges, meeting annually and considering matters of broad agricultural policies that are important to the state as a whole.

At the top of the hierarchy stands the "National Grange" in which

> Voting representation is limited to two delegates from each State Grange, the Master and his wife, but all business sessions of the National Grange are open to any Subordinate Grange member in good standing. As the supreme legislative body of the Order, the logical development of its policies is seen coming up to the National Grange through the channels of Subordinate, Pomona, and State units. . . .[7]

3. Grange activities and policies. Despite its mild political program, now much less aggressive than formerly, the Grange remains an important agricultural force. It is active in the field of mutual insurance, cooperative marketing, and cooperative purchasing. According to the Grange Blue Book, the organization has ". . . nearly $1,000,000,000 of fire insurance

[6] *Ibid.*, p. 206.
[7] *The Grange Blue Book*, p. 18, National Grange.

risks in force, at a saving of practically 50 per cent of the amount charged by old line companies."[8]

The Grange, in common with other major farm organizations, opposes monopoly. It wants a maximum of individual freedom, with government entering only fields that cannot profitably be worked by free enterprise. Essentially this is its policy:

> [It stands for] neither the destruction of crops, nor limiting production in order to force up prices, but rather to divert surpluses to some useful purpose, and to develop a marketing system such that the primary and secondary markets combined will yield a compensatory price at a not over incentive level.[9]

In spite of this statement, in this platform, adopted at the 80th Annual Session at Portland, Oregon, in November, 1946, the usual generalities occur, followed by specific recommendations. Included in the latter are: "We favor use of marketing quotas, when approved by two-thirds of the growers voting in a referendum, for preventing surpluses from creating market gluts; supported by a multiple-price system domestically for utilization of surpluses."[10]

The Farmers' Union

1. Origin and early history. The second of the big three to be organized was the Farmers' Union, set up in 1902 in Texas by Isaac Newton Gresham. Founded by a member of the Grange and a former organizer for the Farmers' Alliance in Lauderdale County, Alabama (the home county of Edward A. O'Neal, former president of the Farm Bureau), the Farmers' Union was, and continues to this day to be, based on the Rochdale principles of cooperation, plus an educational and legislative program.[11] A direct offshoot of the earlier Farmers' Alliances, the Farmers' Union has absorbed many of the smaller groups, including the Farmers' Society and Economic Union of Illinois (1906), National Producers' Alliance (1926), Equity Cooperative Exchange (1926), and the American Society of Equity (1933).

2. Organization of the Farmers' Union. The Farmers' Union is organized at local, state, and national levels, with county and

[8] *Ibid*, p. 16.

[9] Albert S. Goss, "Legislative Program of the National Grange," *Journal of Farm Economics*, Vol. XXIX (February, 1947), p. 53.

[10] "Action by the National Grange," National Grange, November 29, 1946.

[11] For the Rochdale principles see Chapter 16.

intrastate districts sometimes inserted in the hierarchy. Much less attention is paid to ritual and the niceties of organization form than in the Grange. Its membership is composed mainly of small farmers. The bulk of the membership support of the Farmers' Union gradually shifted from the cotton states of the deep South to the grain areas of the Great Plains where it still remains. An index of its strength is the fact that the Farmers' Union handles more grain than any other grain sales agency, private or cooperative, in the United States.

Latest available membership figures indicate that 125,000 farm families were directly affiliated, with an additional 400,000 doing business through the Farmers' Union cooperatives.

3. Farmers' Union activities. The Farmers' Union claims to be the most militant and the most liberal of the major farmer organizations. In an address to the National Farm Institute in Des Moines on February 16, 1946, President James G. Patton asserted:

> We must attack artificial restrictive devices clear across the board, in agriculture, in labor practices, and in industry. Further we must . . . transfer into the thinking of the American people during peace, the same dynamic drive of planning and action which we had in war. If we could only get the concept that we are facing slow death by economic attrition, then I am sure that we would acquire such a dynamic attitude. But we cannot have it, as long as everybody insists on selling America short in order to protect their status quo.[12]

President Patton, in the same speech, went on record as favoring abolition of the parity formula and recommended a program of forward pricing and incentive payments to direct production away from surplus crops into more desired channels.[13]

Clearly distinguishing between production and welfare economics,[14] Patton advocated establishment of minimum dietary

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[12] James G. Patton, "Agriculture Must Serve Mankind," Speech before National Farm Institute, Des Moines, Iowa, February 16, 1946.

[13] For "forward pricing" see *Journal of Farm Economics*, Vol. XXVIII, No. 1 (February, 1946), pp. 267-300

[14] "Production economics" here refers to the use of scarce means in the way that will maximize production, without specific reference to ethical or moral values as such. The "production economist" maintains that these social values are automatically maximized when optimum production techniques are attained. "Welfare economics," on the other hand, is concerned primarily with social values. The "welfare economist" questions the thesis that maximum social benefit automatically follows optimum resource use and advocates active steps to improve the social welfare.

standards for all the people to be maintained by government action, if necessary, but not to be a burden that, through low prices, the farmers were forced to bear. This is a most important clarification of a problem that has caused confusion among farm and nonfarm leaders for decades.

Wesley McCune, journalist and author of a provocative book entitled *The Farm Bloc*, appraises the Farmers' Union as follows:

> It is the support of organized labor, of the President's anti-inflation program, and of the smallest, most downtrodden farmer, that sets the Farmers' Union apart from the Grange, Farm Bureau, and Co-op Council. Other differences among the four are, in general, counter-balanced by a number of similarities; but the Union constantly moves away from its three more conservative brothers, just as they are constantly ganging up on the Union.[15]

The Farm Bureau

1. Origin and early history. The Farm Bureau was organized in 1920 as a national organization to coordinate the efforts of the State Farm Bureaus. The first farm bureaus were organized in the Northeast in the period 1909-1914 to provide financial support for an agricultural expert to work with and advise the farmers of the county. The idea was made national in scope by the passage of the Smith-Lever Extension Act in 1914, which established the county agent system.

The first county agents had been financed by commercial organizations for the purpose of increasing farm production and thus creating improved markets for nonfarm products. With the passage of the Smith-Lever Act, this function was taken over by the Federal and State governments, supposedly working cooperatively. Since the difficulties in obtaining state support seriously hampered the initiation of the program in many states, the State Farm Bureaus were organized to provide backing for county agents. Twelve such State Farm Bureaus, meeting in Ithaca, New York in 1919 and 1920, organized themselves into the American Farm Bureau Federation.[16]

The very close connection between the county agents and the Farm Bureaus is indicated by the fact that in several states

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[15] From *The Farm Bloc* by Wesley McCune, copyright, 1943, by Wesley McCune, reprinted by permission of Doubleday & Company, Inc.

[16] States included were Delaware, Illinois, Iowa, Massachusetts, Michigan, Missouri, New Hampshire, New York, Ohio, Pennsylvania, Vermont, and West Virginia

funds were made available only to counties whose Farm Bureaus had reached a stated membership.

2. Organization of the Farm Bureau. Organization is on county, state, and national levels. Total membership of the Farm Bureau in the United States in 1946 was well over a million. The regional distribution, according to the Farm Bureau's 1946 Annual Report, is:

Region	*Membership, 1946*
Northeastern	141,616
Midwestern	557,446
Southern	366,544
Western	62,653
Total	1,128,259

The main strength of the organization is in the Corn Belt and in the Cotton Belt. It is sometimes said that the Farm Bureau is a coalition of corn and cotton farmers. Dues in the Farm Bureau vary widely between minor subdivisions. In 1946, in Illinois, a strong Farm Bureau state, annual dues were $15, divided as follows: $10 to county Farm Bureau, $4.50 to state, and 50 cents to the national organization. A monthly magazine, entitled *The Nation's Agriculture*, is published by the national office. Some of the state bureaus also publish their own periodicals.

3. Programs and policies. Although educational activities were originally the most important endeavors of the Farm Bureaus, and continue to this day to occupy an important place, they soon began to share the spotlight with, and eventually to relinquish it to, economic and political activities.

The Farm Bureau has been subjected to severe criticism. It has been alleged, and with some show of evidence, that it represents the large and prosperous farmer and utterly ignores, or is opposed to the interest of, the small farmer. Such prominent students as Cary McWilliams and Stuart Chase have been outspoken in their criticism of the Bureau. Chase says of the Bureau:

> The Farm Bureau uses all the slogans of rugged individualism as a smoke screen behind which it manipulates some of the smoothest monopolies known to man. If any American believes that the New Deal agricultural legislation was the product of dreamers, long-haired

professors and agents from Moscow, he is a pretty good dreamer himself. It was the product primarily of local farmers crying to be delivered from free competition. Before you blame them, remember where cotton, wheat, and beef were in 1932—6 cents a pound, 32 cents a bushel, and $3.20 a hundredweight, respectively.[17]

McWilliams attacks the Farm Bureau in these terms:

It is not surprising therefore—although it is still rather shocking—to find the Grange and the Farm Bureau lined up with food processors and distributors in a fight against food subsidies. Here again the evidence of "dicker" is unmistakable. The Farm Bureau does not attack wartime profits and the National Association of Manufacturers does not attack rising food prices; and both attack labor.[18]

The position taken by Chase, McWilliams, and other critics of the Farm Bureau cannot be ignored in any fair appraisal of this organization. The records show that it is more closely allied with the larger farmers than with the small farmers, tenants, croppers, or laborers. Its opposition to the Farm Security Administration program to assist tenants to become owners may be cited as evidence of this fact. Yet it must be said that on all such public questions there is need for a strong opposition agency. The Bureau has acted in such a capacity to a superlative degree. It has many solid achievements to which it can justifiably point with pride. There is the leading part it has played in establishing the county agent system. Then the Farm Bureau was influential in securing adoption of the Capper-Volstead Act, the charter of cooperative agricultural marketing. It has been instrumental in getting the Bankhead-Jones research funds, in liberalizing agricultural credit, and in the passage of the various AAA programs. Recently, the Farm Bureau has supported the Steagall Amendment to support agricultural prices and has in innumerable other ways advanced the interests of the American farmer.

Farmers' Organizations in the American Economy

The farm organizations have fulfilled a pressing need in American society. This need has been described by Blaisdell as follows:

[17] Stuart Chase, *Democracy Under Pressure*, pp. 98, 99. New York: Twentieth Century Fund, 1945.

[18] Reproduced from *Small Farm and Big Farm*, by Carey McWilliams, courtesy of Public Affairs Committee, Inc., New York City.

The concentration of management and control in industry gained by the corporation and the devices associated with it, combined with the economies of large-scale production, have meant that a fraction of the industrial producers dominate industry. No comparable degree of concentration exists in agriculture or distribution, hence there is less chance than in business for the development of a consistent unified group philosophy.[19]

Although the farmer may have been at an economic disadvantage, he has, by the nature of the American governmental organization, been partially able to offset that disadvantage through his political advantage.[20] For example, New York, with thirteen and a half million persons, has the same representation in the United States Senate as has Nevada, with one ninth of a million. These are extremes, but the industrial Northeast is, in general, less heavily represented than the agrarian South, Midwest, and West. Furthermore, as long as a Congressman's influence is determined largely by seniority, the rural South, with its one-party democracy and life-time Congressmen, will be a stronghold of agricultural power. It is apparent that an organization that can influence farm Congressmen can play a large part in developing national policy. This, more than the economic activities of farmers, is the basis of agricultural power.

One of the cardinal contentions of the farm organizations is for equality for agriculture. Can this be attained? Economic theory and past history unite in answering: Not entirely. In 1830, more than eight out of ten persons in the United States were engaged in agriculture as compared with about three in ten in 1910 and less than two in 1945. Because of increasing total population, however, the declining *percentage* engaged in agriculture did not become a declining *number* until about 1910. From that time to the present, interrupted only by the back-to-the-farm movement of the depression thirties, there has been a slow but steady decline in numbers of persons engaged in agriculture.

This decline has been a direct result of lack of opportunity in farming. Workers are leaving the farms because better opportunities, reflecting higher productivity per man, are available in industry. Agriculture produces mostly basic necessities, the

[19] Donald C. Blaisdell, "Economic Power and Political Pressures," p. 175. Temporary National Economic Committee, *Monograph No. 26*, 1941.

[20] *Ibid.*, p. 176.

demand for which is distinctly inelastic. As technology improves and potential productivity per man increases (demand tending to remain the same), agriculture is faced with a dilemma. Either workers must leave agriculture or they must "spread the work"—that is, they must be employed at less than their full capacities. Otherwise supply will outrun effective demand. It has been indicated that workers are leaving agriculture; those who remain are working at less than full capacity; despite this, supply in some commodities tends to outrun effective demand.

What are the implications of these facts? Clearly, as long as we make economic progress and retain some traces of competition, we will have a farm problem. To try to keep in agriculture everyone who is now so engaged or, what is the same thing, to try to make farming profitable for everyone, is obviously hopeless unless we are willing either to adopt a static, nonprogressive economy or to surrender the vestiges of competition we still retain.

The farmer organizations are not prepared to accept either of these alternatives. Largely preoccupied with the problems of the big farmer, the farmer organizations, with one or two notable exceptions, have shown in their programs and policies that they, like most special interest groups, are unable to give objective consideration to matters of national policy. Yet current discussions of topics like agricultural-industrial relationships, including the problem of finding off-farm employment for displaced farm people, show that the organizations are awakening to their responsibilities. With an impressive list of past accomplishments, the farm organizations faced the future prepared to help the farmer meet the challenge of a dynamic and expanding American economy.

Questions

1. For what purposes were the following farmer-organizations formed: (*a*) early scientific agricultural societies; (*b*) early farmer-organizations; (*c*) the Grange; (*d*) the Farmers' Union; (*e*) the Farm Bureau?
2. How were the Grange, Farmers' Union, and the Farm Bureau formed? Give the conditions and the leader in each case.
3. State the chief activities of each of the major farmer-organizations.
4. How do the major farmer-organizations differ on national policies affecting agriculture?

5. What are some of the criticisms that have been made of the farmer-organizations?
6. How would you describe the place of the farmer-organizations in American economy?

References

Beard, Charles A., and Beard, Mary R., *Basic History of the United States*, Chapter 13. Philadelphia: The Blakiston Co. (New Home Library Edition), 1944.

Blaisdell, Donald C., "Economic Power and Political Pressure." Temporary National Economic Committee, *Monograph No. 26*, 1941.

Chase, Stuart, *Democracy Under Pressure*. New York: Twentieth Century Fund, 1945.

Hibbard, Benjamin Horace, *Marketing Agricultural Products*. New York: D. Appleton-Century Company, 1921.

Journal of Farm Economics, Vol. XXVIII, No 1 (February, 1946).

McCune, Wesley, *The Farm Bloc*. New York: Doubleday Doran & Co., Inc., 1943.

McWilliams, Cary, "Small and Big Farms," Public Affairs *Pamphlet No. 100*.

Shannon, Fred A., *The Farmers' Last Frontier*, Chapter 13 New York: Rinehart & Co., Inc , 1945.

The Grange Blue Books, published by the National Grange.

CHAPTER 24

Farm Price Policies and Programs

THE AMERICAN FARMER has been dubbed "the most pampered guy on earth."[1] The use of the word "pampered" is not quite correct. It would be more accurate to say that the American farmer has been "assisted" by state and Federal governments in overcoming, or at least in mitigating, the effect of forces over which he, as an individual, has little or no control. To give such assistance the Federal government has had to formulate price and production policies and to initiate production programs. The nature of these policies and programs is the subject of this and the following chapters.

The Recognition of Agriculture

1. United States Department of Agriculture. Agriculture was recognized as an integral part of the American economy as early as 1776. At that time, however, the only organized attention directed toward the solution of the farmers' problems was carried on by what were called "agricultural societies,"[2] which were, for the most part, organized and directed by "gentlemen" farmers. These societies were responsible for obtaining national recognition of agriculture, which in due time placed the "dirt" farmer in a position of great economic and political importance.

At the outset there were a number of preliminary skirmishes that were not very effective. Two resolutions adopted by the Second Continental Congress in 1778 suggested the creation of a Federal Department of Agriculture, the chief function of which would be to aid the agricultural societies. George Washington, before leaving his executive position as president in 1797, recommended the creation of a Board of Agriculture.[3]

[1] J. B. Griswold, *American Magazine*, May, 1947, p. 26.

[2] See Chapter 19.

[3] "Farmers in a Changing World. American Agriculture the First 300 Years," by Everett and Edwards, U. S. D. A. *Yearbook of Agriculture*, 1940, p. 171; H. C. Taylor, in a note to the author, dated March 18, 1948, states "George Washington proposed a Board of Agriculture because he was in close correspondence with Arthur Young and Sir John Sinclair of England"

This, as well as several other suggestions, was ignored. It was not until May 15, 1862 that effective action was taken by the Congress to create a United States Department of Agriculture under the direction of a commissioner, without cabinet status. This defect, however, under pressure from the Grange and the Farmers' Alliance, was removed on February 9, 1889, when the title of the Head of the Department was changed from Commissioner to Secretary.

In recognition of the importance of agriculture to the nation's economy the Congress has been generous in its appropriations for the support of the Department. "During the first 27 years," notes Edwards,[4] "the Department's annual expenditures rose from $64,000 to more than $1,000,000." Today the Department appropriates more than 900 million dollars and employs some 60,000 persons.

2. State experiment stations. Further recognition was given to agriculture by the creation of the State experiment stations. These research agencies are charged with the task of investigating the social, economic, and technical problems of agriculture.

The first State agricultural experiment station was erected at Wesleyan University, Middletown, Connecticut, in 1875. After 1880 a number of State agricultural colleges established stations. Formal meetings of college representatives were held under the leadership of the Commissioner of Agriculture to coordinate the work of the individual stations for the benefit of the entire nation. At the convention of 1885 it was voted to seek congressional aid for experiment stations. Two years later a permanent organization under the name of the Association of American Agricultural Colleges and Experiment Stations was set up, and, together with the National Grange, it created nationwide sentiment in favor of Government action. Congress responded in 1887 with the Hatch Bill, authorizing a national system of agricultural experimentation, the first of its kind in the world.[5]

The scope and activities of the experiment stations were enlarged by the passage of the Purnell Act of 1925, which provided $60,000 per year to each State experiment station. This act was designed to provide funds whereby the social and economic problems of the farmer could be given equal attention with those of a technical nature.[6] With the absolute increase in the im-

[4] "Farmers in a Changing World. American Agriculture the First 300 Years," by Everett and Edwards, U. S. D. A. *Yearbook of Agriculture*, 1940, p. 171.

[5] *Ibid*, p. 251.

[6] "Federal Legislation, Rulings, and Regulations Affecting the State Agricultural Experiment Stations," U. S. D. A. *Miscellaneous Publication No. 515*, p. 14. Issued March, 1943; revised September 1946.

portance of agriculture in the national economy, the Congress provided, in 1935, $5,000,000 under the Bankhead-Jones Act. In 1947 further financial support was given to the experiment stations under the Research-Marketing Act, which will provide about $20,000,000 to the stations when the provisions of the Act are in full effect.

There are several unique provisions of the Research-Marketing Act that should be emphasized. In Title I, which provides for the support of the station, there is a provision to the effect that not less than 20 per cent of the funds authorized shall be used in marketing research. Title II provides that all of the funds designated for the use of the United States Department of Agriculture shall be spent in marketing.

3. Extension service. Seaman A. Knapp, who was sent to the South in 1904 by the United States Department of Agriculture to assist farmers in combatting the Mexican boll weevil, was the creator of the idea of working directly with farmers. The organization designed at that time was extended gradually to include field instruction in all aspects of farming. The General Education Board, New York,[7] became interested in this type of teaching and at the beginning helped finance the venture. At the present time some $45,000,000 are spent annually by the states and the Federal government[8] in extending information to farmers.

4. Resident instruction. Financial assistance for formal resident instruction antedates other efforts of the Federal government in its recognition of agriculture. The movement for the establishment of land grant colleges began with the passage of the Morrill Act, July 2, 1862, under which the income from the sale or rent of 30,000 acres of public lands was made available to each state in the Union for the establishment of land grant colleges. This provision did not prove satisfactory, and the act was amended so as to provide $50,000 to each state for the support of teaching agriculture and allied subjects. Federal funds have been augmented by state appropriations to such an extent that some $168,000,000[9] are used annually for the support of land grant colleges.

[7] "Farmers in a Changing World," U. S. D. A. *Yearbook of Agriculture*, 1940, p. 252.

[8] Report of Cooperative Extension Work in Agriculture and Home Economics, 1946, p. 36.

[9] Statistics of Land Grant Colleges and Universities, 1946.

5. Vocational agricultural education. This story of Federal aid to farmers would not be complete without some mention of vocational agricultural education, which is a scheme whereby farmers' children over 14 years old are provided "systematic instruction in agricultural subjects." The objective is to prepare the "farm youth" to do a more efficient job of farming than their parents. The idea of vocational education is not new, but Federal aid was first provided by Smith-Hughes Act of 1917. From 1918 to 1948, inclusive, the Federal government alone has contributed approximately 126 million dollars. To this sum local and state governmental units have added some 219 million dollars. Currently, Federal and state units combined are spending approximately 30 million dollars annually.

Critical Problems

Unquestionably, it was the congressional theory that education would solve the farmers' problems. This was also the theory of those agricultural leaders who backed the congressional appropriations for the establishment of the United States Department of Agriculture, the state experiment stations, the land grant colleges, the extension service, and vocational agricultural education. The nation was scarcely, if at all, conscious that the farmer was facing a force more potent than ignorance. As the economy of the nation expanded, its character began to change.[10] At the outset it was highly competitive because farming, which dominated the national economy, consisted of a large number of small highly competitive units. With the passing of time, the national economy gradually changed. (See Figure 1.) In the place of small independent business units, there emerged corporations under the rule of which monopoly and imperfect competition became dominant. To be sure, the individual was still free to choose his occupation, but free enterprise, as it existed prior to the twentieth century, was no longer a reality. It was possible, in theory at least, for the individual to establish a business. But the chances for success were conditioned by monopolistic competition. Hence, the greater part of the population found it more convenient to work as

[10] This discussion recognizes that there are many forces which condition and influence the action of farmers but for the purpose of this chapter emphasis is placed on the changes which have taken place in the structure of our economy, which make governmental participation necessary and inevitable.

laborers than to assume the risks of entrepreneurship. This is attested to by the fact that in 1940 about three-eighths of the total population of 132,000,000 were employees.[11] Another 13 million were classified as managers. The degree of concentration, which is evidence of monopolistic control, is indicated by the data presented in Table 33.

TABLE 33

PERCENTAGE OF TOTAL OUTPUT PRODUCED BY A FEW DOMINANT FIRMS IN THE PRODUCTION OF SELECTED COMMODITIES, UNITED STATES, FOR SELECTED YEARS*

Product	*Year*	*Number of Companies*	*Percentage of Output*
Virgin aluminum.	1937	1	100
Cans	1935	3	90
Corn binders .	1936	4	100
Iron ore.	1935	4	64
Wood pulp...	1935	4	35

* Source. Hearings before the Temporary National Economic Committee, Part 1, p 137

Under these circumstances the farmer found himself in a precarious position. Although he could and did increase his productivity, he was not able to take advantage of the economies resulting from large-scale operations. Nor was he able to use that device that other entrepreneurs found effective, namely, consolidation of business that gave monopoly or semi-monopolistic control over output. He found himself hampered by his labor supply, which consisted of himself and his immediate family. This labor supply could not be discharged when economic conditions demanded a decrease in production. On the other hand, urban industries were, as a rule, in a much more favorable position since their labor supply was hired and could be discharged if and when a curtailment in production was desirable. This is attested to by the data in Table 34.

Surrounded as he was by a monopolistic sea, the farmer fell back on a subsistence basis during periods of acute depression, or what is popularly known as "live-at-home programs." This course of procedure, however, was much better suited to the self-sufficient economy of the earlier days than to a highly

[11] United States Population Census.

commercial economy in which the farmer had to function. Self-sufficiency was not a weapon designed to pay the principal and interest on a mortgage debt, nor to buy in the market those things that, on close examination, consisted of a large number of items. Then, too, the education of his children was a problem that demanded the use of cash, not goods.

It became evident to the farmer, long before the Congress or the farm leaders had sensed the farmers' real plight, that his

TABLE 34

INDUSTRIAL AND AGRICULTURAL PRODUCTION AND PRICE INDEXES, UNITED STATES, 1926-1939*

(1929 = 100)

Year	Production		Price	
	Industrial	*Agricultural*	*Industrial*	*Agricultural*
1929	100	100	100	100
1930	83	100	95	86
1931	68	106	81	60
1932	53	99	70	44
1933	63	96	71	48
1934	68	93	80	62
1935	79	91	82	74
1936	94	94	81	78
1937	103	108	85	83
1938	80	103	70	65
1939	93	106	89	64

* Source "Agriculture and the National Economy," Temporary National Economic Committee, *Monograph No 23*, p. 39.

only recourse was exploitation of fixed resources (that is, his land, capital goods, and family labor). This way out was not only to be used in periods of severe depression but even more effectively during periods of prosperity.[12]

This exploitation, which had been in progress since the beginning of the nineteenth century, along with the fact that agriculture had become a marginal business enterprise, was brought forcibly to the attention of the nation when our economy collapsed after World War I.[13] (See Figure 42.) There emerged

[12] G. W. Forster, "Progress and Problems in Agricultural Planning in the Southern States," *Journal of Farm Economics*, Vol. XVIII, No. 1 (1936), pp. 86-94.

[13] The farmer was in a precarious condition prior to 1929. The agricultural depression set in as early as 1921.

then the critical problems of "restoring" the farmer to a parity position with other entrepreneurs in our economy and of conserving the declining land resources.

Seeking a Solution

1. Commission of Agricultural Inquiry. The first major attempt to solve the farm problem was made by increasing the tariff rates.[14] This was in keeping with American traditions.

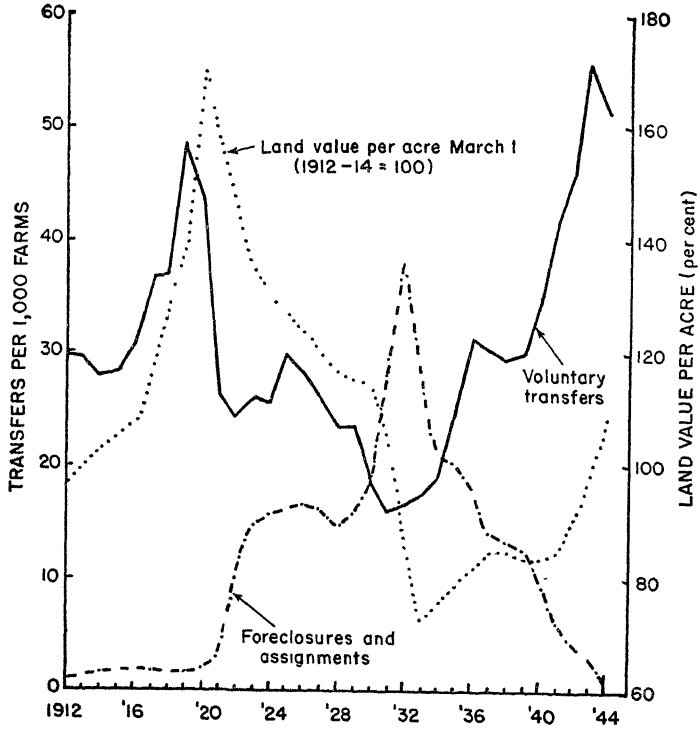

FIG. 42. CHANGES IN ECONOMIC CONDITIONS AS REGISTERED BY LAND VALUES, TRANSFERS, AND FORECLOSURES, 1912-1944. (Source: *1946 Agricultural Outlook Charts*, page 34.)

But the Congress was becoming suspicious that this "old reliable" remedy would not be effective. At least it created a "Joint Commission of Agricultural Inquiry," charged with the task of investigating and reporting on:[15]

[14] The Fordney Emergency Tariff Bill was introduced December 20, 1920, but it was not passed until September 21, 1922.

[15] Adapted from *Report No. 408*, Part I, pp 9-11, 67th Congress, 1st Session. Washington, D. C.: U. S Government Printing Office, 1921.

(1) The causes of the present condition of agriculture
(2) The cause of the difference between the prices of agricultural products paid to the producer and the ultimate cost to the consumer.
(3) The comparative condition of industries other than agriculture.
(4) The relation of prices of commodities, other than agricultural products, to such products
(5) The banking and financial resources and credits of the country, especially as affecting agricultural credits
(6) The marketing and transportation facilities of the country.

Following its investigation, the Commission recommended:

(1) Legalization of farmer cooperatives
(2) Modification of the present banking system so as to supply farmers with needed credit.
(3) Creation of a warehouse system "which will provide a uniform liability on the part of the warehousemen and in which the moral and financial hazards are fully insured."
(4) Immediate reduction in freight rates on farm products.
(5) Extension of the statistical work of the United States Department of Agriculture.
(6) Placing agricultural attaches in principal foreign countries producing and consuming agricultural products.
(7) Development by trade associations and by state and Federal sanction of more accurate, uniform, and practical grades of agricultural products and standards of containers.
(8) Federal appropriation for the promotion of more farm management studies.
(9) Provision for an extended and coordinated program of a practical and scientific investigation through State and National departments of agriculture and through agricultural colleges and universities directed toward reducing the hazards of climate and weather conditions and of plant and animal diseases and insect pests.
(10) More adequate wholesale terminal facilities, particularly for handling perishables at primary markets, and a more thorough organization of the agencies and facilities of distribution of the large consuming centers of the country.
(11) Development of better roads to local markets, of joint facilities at terminals connecting rail, water, and motor transport systems, and of more adequate facilities at shipping points with a view to reducing the cost of marketing and distributing.
(12) Greater effort to be directed to the improvement of community life.
(13) Readjustment of prices for commodities "to the end that prices received for (farm) commodities will represent a fair division

of the economic rewards of the industry, risk, management, and investment of capital."

These recommendations, with the exception, perhaps, of item 13, imply assisted laissez faire. There was no assurance, implied or stated, that the government would interfere with "economic forces." To be sure, the farmer would be given help but only of the sort that would "help him to help himself." Indeed, with respect to the recommendations as a whole, the Commission, conscious perhaps that the recommendations might be construed to mean government interference, specifically stated: "These conditions [these necessary to provide a fair division of economic rewards] cannot be brought about by legislative formulas but must be the result for the most part of the interplay of economic forces." Furthermore, it remarked, no doubt by way of emphasis, "In making the foregoing recommendation it must be understood that the jurisdiction of the Federal Government is limited [by the constitution] and that [therefore] it cannot directly regulate production, marketing, or transportation not the subject of interstate commerce."

2. More specific proposals. Following the report of the Joint Commission of Agricultural Inquiry, there were several investigations of farming conditions with recommendations as to how the depression might be checked and as to how the agricultural and industrial economies could be normalized.[16] These reports need not be considered since they did not suggest any radical departure from assisted laissez faire. There were at this time, however, a number of specific proposals that were designed to put the government into active support of the farmer. They were not suggestions that would help farmers help themselves but were intended to have the government help the farmers by direct, not indirect, action. Among the more important of the schemes were the Equalization Fee, the Domestic Allotment, and the Export Debenture Plans. All of these plans were designed to make the tariff effective on export commodities. For the accomplishment of this unique task, various devices were to be employed, of which the following are typical:

[16] "Conditions of Agriculture in the United States and Measures for Its Improvement." Washington, D. C.: National Industrial Conference Board and Chamber of Commerce of the United States, 1922; "Report of Special Committee on the Agricultural Situation," 1920. Proceedings of the 41st Annual Convention of Land Grant Colleges and Universities.

a. Equalization Fee Plan. Under the Equalization Fee Plan a tax, called an "equalization fee," was to be imposed upon the product and paid by the growers. For example, in the case of cotton, the tax was to be levied upon each bale of cotton at the time it was ginned. The tax or fee was to pay (1) for the cost of administration, (2) for the loss incurred on selling cotton on the world market, and (3) to enhance the price of cotton sold in the domestic market.

As cotton is on an export basis, the amounts sold abroad would have to be sold at the world price, and on all exported cotton a loss would be incurred. As this loss would absorb a part of the equalization fee that the growers had already paid, they would get it back in the form of a higher domestic price. In short, the plan transferred the cost to the domestic consumer of goods. How such a plan would operate is illustrated below. Assume the following data:

(1) Production (in million bales)	15 0
(2) Exports (in million bales)	6 7
(3) Percentage exported	45%
(4) Current free trade price per lb.	16¢
(5) Tariff per lb.	4¢
(6) Total price paid to producer	20¢

Then:

		Million dollars
(1) 15 million bales @ 20¢ per lb.		$1,500.0
(2) 15 million bales @ 16¢ per lb.		1,200.0
(3) Gain in gross income due to plan		300.0
(4) Less loss on 6.7 million bales exported @ 4¢ per lb.	$134 0	
(5) Less administrative costs	1 0	135.0
(6) Net gain for plan		$ 165.0
(7) Gross gain per bale ($100 − $80)	20.00	
(8) Equalization fee per bale	8.82	
(9) Net gain per bale	$11.18	

The free trade price (that is, without the protection of a tariff) is assumed to be 16¢ per pound, and the tariff levied 4¢ per pound, or a total of 20¢ per pound for all cotton produced. The price of 20¢ per pound is to be paid to all producers for their total production. This would give, according to the illustration, a

total gross income of 1,500 million dollars as contrasted with 1,200 million dollars, if all of the crop were sold at the free trade price of 16¢.[17] The difference between these two gross figures is 300 million dollars, which represents the gain in gross income due to the plan.

There would be, however, no means by which the exports of 6,700,000 bales could be sold abroad at 20¢. Assuming that the exports would have to be sold at 16¢, there would be a loss on each pound exported of at least 4¢ per pound, which would amount to 134 million dollars. In addition to the loss on exports, the administrative expenses would have to be deducted from the gross gain. What these administrative expenses would be, of course, would be unknown in advance of actual experience, but for purpose of illustration they are estimated at one million dollars. The loss on exports plus the administrative expenses equal 135 million dollars. This sum deducted from the gain in gross income leaves a net gain to producers of 165 million dollars, or a gross gain per bale of $20.

As already stated the loss on exports and administrative expenses are to be absorbed by an equalization fee, collected on each bale as it is ginned. The fee would have to be estimated in advance because loss on exports and the administrative expenses would be unknown at the time of ginning. In the illustration, however, the equalization fee would have to be $8.82 per bale. This is derived by dividing the total production of 15,000,000 bales into $135,000,000, the estimated loss in exports and administrative expenses. The net gain per bale would be $11.18.[18]

b. Domestic Allotment Plan. It will not be necessary (since these Plans are of historic interest only) to describe in detail the Domestic Allotment Plan and how it would operate. The chief difference between this and the Equalization Fee Plan is that in the latter the farmer was to receive a price on all of

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[17] The domestic price would be less than this by at least the cost of transportation to the foreign markets. It also assumes that domestic consumption would not be affected by price.

[18] In the event that the fee were $5 per bale, then the total fee revenue would be $75,000,000 (or 15,000,000 bales × $5). In this case $75,000,000 would be available for the payment of losses on cotton sold at free trade domestic prices (a loss of $60,000,000).

his production equal to the normal free domestic price plus the tariff, whereas under the Domestic Allotment Plan the grower is to be paid the domestic free trade price plus the tariff on only that part of the product produced for the domestic market.[19] The grower was to be issued transferable rights certificates covering his domestic production allotment. These certificates would have a market value because no part of the product could be processed for domestic use unless the processor had possession of these certificates to the extent of the product to be processed. Thus the grower's price would be the domestic free trade price plus the value of the transferable rights certificates. For financing the administration of the Plan, the Administration Board would have to issue to the growers certificates valued at something less than the amount calculated. The Board could then sell these extra certificates to processors.[20]

c. Export Debenture Plan. From the fertile minds of this period came another plan by which a tariff could be made to serve the producers of export commodities. This was the Export Debenture Plan, under which certificates, known as export debentures, were to be issued to exporters. These debentures were transferable and could be used to pay tariffs on any imports. Thus those exporters to whom such debentures were issued could sell these debentures to importers who could in turn use them to pay the duties on imports.

The plan, as visioned by its creators, would work somewhat as follows: Suppose the debenture rate on cotton were 2¢ per pound.[21] In this event if an exporter were shipping 100 bales of cotton (478 lbs. to the bale), the Secretary of the Treasury would issue debenture certificates to the amount of $956 (100 × $9.56). These certificates would be worth their face value at the custom house in payment of import duties. Since the exporter could not get these debentures until he had actually bought cotton for export, it was argued that he would bid up the price of the cotton in the domestic market to the extent

[19] The Plan provided for the allocation to each farmer of what was called a "domestic allotment" or a percentage of his total output that corresponded roughly to that used in the domestic market

[20] In both the Equalization Fee and the Domestic Allotment Plans, no restriction was to be placed upon output.

[21] The debenture rate was to be the same as the tariff rate imposed.

of the debenture rate, here assumed to be 2¢ per pound. In this manner the price paid would be the domestic free trade price plus the debenture rate.

The debenture rates were to be flexible, varying with the tariff and the response of production to higher prices. The tariff rate on any specific product was to be roughly the difference between the cost of production in the United States and abroad. The debenture rates were to be changed from time to time in response to production. Suppose that in response to higher prices, production was increased by 20 per cent. In this case no change would be made in the rates. But for an increase in production from 20 to 40 per cent the rates were to be reduced by 20 per cent. When the increase in production equaled as much as 90 per cent or more, the rate was reduced by 99 per cent, in which case the plan would become virtually inoperative.

A Plan Is Tried

In the search for a solution other plans were suggested but none, including those discussed, were ever put into effect. As the agricultural depression deepened and grew darker and more sinister, it became evident that some plan would have to be adopted. The initiative was taken by Herbert Hoover, candidate for president on the Republican ticket. Mr. Hoover outlined what he considered an acceptable plan in speeches delivered during his campaign for the presidency. Later, as president, he approved the Agricultural Marketing Act on June 15, 1929. This Act put the Federal government in the business of stabilizing prices. Assisted laissez faire was abandoned, and direct action became a national policy. The opening statement of the Act clearly indicates this fact—

Section 1. (*a*) That it is hereby declared to be the policy of Congress to promote the effective merchandising of agricultural commodities in interstate and foreign commerce, so that the industry of agriculture will be placed on a basis of economic equality with other industries, and to that end to protect, control, and stabilize the currents of interstate and foreign commerce in the marketing of agricultural commodities and their food products. . . .

To carry out such a policy the Act provided for the creation of a Federal Farm Board, Stabilization Corporations, and a $500,000,000 revolving fund. Armed with this sum and the

powers granted to it under the Act, the Board went into action. During its active existence, June, 1929 to June, 1932, it made loans to cooperatives and engaged in direct stabilization activities to the extent of some 676 million dollars.[22] On the whole, its operations were ineffective. The Board itself recognized its failure in a sort of a "left-handed" manner in the following statements:

ALEXANDER LEGGE

JAMES C. STONE

MEMBERS OF THE FARM BOARD

(1) Prices can be maintained above their normal levels if some agency is prepared to pay the costs.

(2) Stabilization costs must be paid by someone. To help farmers, they would have to be paid by others, either in higher prices or higher taxes. The agricultural marketing act makes no provision for paying the costs on a permanent basis, other than from the limited revolving fund.

(3) The experience in disposing of stabilization stocks to date has demonstrated that accumulated supplies can be eased into the markets without depressing current prices below the levels set by the existing supplies and the prevailing level of demand.

(4) The very act of purchasing supplies and maintaining prices in surplus years tends to encourage farmers to continue production, and so to prevent the deficit years, in which the supplies could be sold without loss, from ever arriving. In the long run stabilization thus tends to perpetuate the very situation it is aimed to relieve.

[22] Third Annual Report of the Federal Farm Board, June 30, 1932, p. 97.

(5) For certain products, such as wheat, the exportable surplus is considerably less than domestic consumption. If domestic prices are maintained above world market parities, foreign buyers are unable to purchase at the domestic level of prices. If, under these conditions, the selling agency is in position to sell at world prices to foreign buyers, the accumulated stocks may be disposed of without reducing domestic prices to the lower world level. Such transactions, however, cannot be conducted on a large or permanent scale without leading to foreign retaliation, and hence do not offer a permanent method of operation.

Experience with stabilization thus demonstrates that no measure for improving the price of farm products other than increasing the demand of consumers can be effective over a period of years unless it provides a more definite control of production than has been achieved so far. In a few limited and specialized lines, cooperative associations have made progress toward such control. For the great staple products, however, the problem still remains for future solution.[23]

One student commenting on the Board's activities says:

It seems clear that the only net price-supporting influence of the Board's stabilization operations was that which resulted from the disposition of part of the Board's accumulated supplies outside of regular commercial channels to consumers who otherwise would not have purchased them. The only over-all price-supporting effect over the whole period of the Board's operation came from the extent to which the Board thus subsidized consumption.[24]

Although the Board admitted failure to stabilize prices, it did claim some positive results for its activities. These may be summarized as follows:

(1) It strengthened and enlarged business of farmer-marketing cooperatives.

(2) It reduced marketing and selling costs (for example, $3,000,000 in patronage dividends and cash savings by virtue of lower commission charges by terminal marketing agencies and cotton selling cost reduced by $1 per bale).

(3) It improved business marketing practices of cooperatives (for example, by use of optional pools and seasonal pools.)

(4) It gave direct assistance to the solution of specific cooperative problems (for example, estimating the quality of cotton).

(5) It increased returns to wheat growers by some six million dollars.

(6) It caused cotton and wheat prices to be higher than they would otherwise have been.

[23] *Ibid*, pp. 61-62.

[24] Geoffrey S. Shepherd, *Agricultural Price Control*, pp. 33-34. Ames: The Collegiate Press, Inc., 1945.

(7) It distributed, under direction from Congress, grain to the needy (through American Red Cross) in China, the United States, and territories, and supplied grain and seeds to farmers in crop-failure areas.

In spite of these claims, this initial departure from assisted laissez faire can, in the main, be declared a failure in that the Board did not succeed in stemming the on-rushing tide of the agricultural depression.

Questions

1. Why has the American farmer been dubbed "the most pampered guy on earth"?
2. In what ways and to what extent has farming been recognized by the Federal government?
3. Describe the farmers' economic position immediately following World War I.
4. How did Congress attack the "farm problem," and what was the essence of its policy?
5. What proposals were made to help farmers get a "fair" share of the national income?
6. Describe the Equalization Fee Plan.
7. How did the Equalization Fee Plan differ from the Domestic Allotment Plan?
8. Describe briefly the Export Debenture Plan. How would it operate if put into effect?
9. To what extent was the Agricultural Marketing Act of 1929 a departure from laissez-faire policy?
10. What did the Federal Farm Board try to do? To what extent did it fail?

References

Baird, Frieda, and Benner, Claude L., *Ten Years of Federal Intermediate Credits*, Chapter 1. Washington, D. C.: The Brookings Institution, 1933.

Barger, Harold, and Landsberg, Hans H., *American Agriculture 1899-1939*, Chapter 1. New York: National Bureau of Economic Research, Inc., 1942.

Black, John D., *Agricultural Reform in the United States*. New York: McGraw-Hill Book Company, Inc., 1929.

Davis, Joseph S., *Agricultural Policy*. Stanford: Stanford University Press, 1939.

National Industrial Board and Chamber of Commerce of the United States, "The Condition of Agriculture in the United States and Measures for Its Improvement." Washington, D. C., 1922.

CHAPTER 25

Farm Price Policies and Programs—Continued

WITH THE FAILURE of the stabilization operations of the Federal Farm Board the conflict over economic policy was sharply drawn. The proponents of laissez faire were not bashful in pointing out the futility of direct governmental intervention. To such adherents it was useless, if not slightly insane, for the "Great Economic Law of Supply and Demand" to be combatted by anyone, even by such a powerful agency as the Federal government. On the other hand, the proponents of direct governmental action were quick to advance a new set of proposals.[1] The atmosphere was not in accord with an objective consideration of these antagonistic policies. But because of the severity of the depression, the Congress was willing to take another "flyer" with direct governmental participation in the management of the agricultural economy. It provided the Agricultural Adjustment Act on May 12, 1933.

It would be inferring too much to say that the Congress had abandoned laissez faire in dealing with agriculture or with any other sector of the economy.[2] But it was all too apparent that laissez faire "assisted" or "unassisted" was an inadequate policy. A more generous inference, and probably more correct, is that the Congress, and especially those who drafted the legislation, recognized that, irrespective of the emergency, agriculture was operating under markedly different conditions from the other sectors of the economy and that for them to adhere solely to a policy of laissez faire would be unrealistic.

[1] There was an intermediate group, who, as has been aptly said, belonged "to neither extreme laissez faire nor to the extreme governmental control or operation." (See E. G. Nourse and others, *Three Years of the Agricultural Adjustment Administration*, p. 480. Washington, D. C.: Institute of Economics of the Brookings Institution, 1937.

[2] Sec. 13 of this Act no doubt expressed the thinking of most Congressmen on this point. It says in part: "This title [Title I] shall cease to be in effect whenever the President finds and proclaims that the national emergency in relation to agriculture has been ended."

Before the consideration of the provisions of this Act, it must be said that its objectives were not clearly stated. There were at this time, beyond any reasonable doubt, maladjustments both in agriculture and in the rest of the economy. There were more farm products for sale than could be sold at "reasonable" or "fair" prices. Two ways were open by which intersector adjustments might be achieved. (1) Since agricultural production had been highly stable, direct action could be taken to speed up the production of nonagricultural goods and services so that there would be more industrial goods for exchange with the additional farm products, thus eliminating or at least reducing income disparity. This method was more or less vaguely expressed later in the slogan "An Economy of Abundance."[3] (2) A second alternative was the curtailment of farm output.

The first method was never seriously considered. In the nonagricultural sectors monopolies exist to such an extent that to get these sectors to agree to a program of increased production would be a formidable undertaking and one that the government might well hesitate to undertake. Indeed, the experience of government under the National Industrial Recovery Act would indicate as much.[4] However, Congress made an indirect attack on the economy of the nonagricultural sectors. Large funds[5] were appropriated to put to work the industrial unemployed, through various public agencies, such as C.C.C., C.W.A., P.W.A., and W.P.A.[6] In this manner the Congress in part succeeded in stimulating the other sectors of the economy to greater activity.

Policy

Faced with these alternatives, the Congress elected to put the Federal government into the business of controlling the output of farm products. This was a major and fundamental departure from traditional national policy. The essence of the policy was the control of farm output and the regulation of the

[3] First used by Henry A. Wallace who was Secretary of Agriculture at this time. See *The New York Times*, January 3, 1937, p. 18; and *Three Years of the Agricultural Adjustment Administration*, p. 27.

[4] This Act was designed to increase industrial activity.

[5] Some 18 billion dollars were expended on general relief, C.C.C., W.P.A., and other emergency agencies from January 1938 through December 1941.

[6] Civilian Conservation Corps, Civil Works Administration, Public Works Administration, and Works Progress Administration.

marketing of such products so that economic status of farmers would be on parity with economic status of groups in the other sectors of our economy. This major objective was to be achieved by the provision for "equality of purchasing power" of farm products. In the words of Congress—[7]

> It is hereby the declared policy . . . to establish and maintain such balance between the production and consumption of agricultural commodities, and such marketing conditions . . . as will reestablish prices to farmers at a level that will give (current) *agricultural commodities a purchasing power . . . equivalent to purchasing power of agricultural commodities in the base period.*[8] (Author's italics.)

In subsequent legislation certain changes were made, not so much in fundamental policy as in the methods of implementation. These changes were made as a result of a Supreme Court decision of January 6, 1936, in which the taxing features of the 1933 Act were invalidated. Specifically, the Court held that the processing taxes levied to finance benefit payments (see Sec. 2), were unconstitutional according to the Court's interpretation of the 10th Amendment, which delegates to the states such powers as are not specifically reserved for the United States government.

In reaction to this drastic decision, an addition was made to agricultural policy in the Agricultural Adjustment Act of 1936. It now is the policy of the Federal government not only to achieve economic parity for agriculture but also "to preserve the soil fertility and to diminish improper and to promote proper land use."[9] Thus, production control was to be achieved not directly by contracts to reduce production but indirectly by payments to farmers designed to divert production from basic commodities to soil-improving crops.

This provision in the 1936 Act, however, was not effective in obtaining "equality for agriculture," in that it did not prevent the accumulation of large surpluses of farm products. Congress, reacting to this threat to its major policy, enacted the Agricultural Adjustment Act of 1938. It provides

> . . . for continuation of the agricultural conservation program. In addition, under designated conditions, loans are to be made on agricul-

[7] See Agricultural Adjustment Act of 1933, Sec. 2.
[8] The nature of the base period will be discussed under "Implementation."
[9] U S. D. A. *Yearbook*, 1938, "Soils and Men," p. 311.

tural commodities to producers who are cooperating in the conservation programs (and, under certain conditions and limitations, to non-cooperators), in order to create an "ever-normal granary" of particular commodities. When the reserves reach stated levels, marketing allotments may, under certain conditions, be established in the interest of controlling the total volume of particular agricultural commodities to reach the market of the nation.[10]

In the Agricultural Acts of 1948 and 1949 Congress does not abandon its policy of equality for agriculture but changes somewhat the means by which equality may be achieved.

Implementation

How was equality to be accomplished in a "free economy"? In the various acts, this responsibility has been assigned to the Secretary of Agriculture. To these responsibilities attention will now be directed.

1. Control of production. Since it was realized that the price of a product is determined, at least to some extent, by "law of supply and demand," provisions were made in the 1933 Act for the control of production of what were called "basic commodities." These included wheat, cotton, field corn, hogs, rice, tobacco, milk, and dairy products. As the experiment unfolded other commodities were subjected to control. Thus under the Steagall Amendment to the 1938 Agricultural Adjustment Act, a large number of commodities, such as eggs, chickens, turkeys, soybeans, and peanuts, were added. Indeed, any product was included for which, during World War II emergency, the Secretary had requested an increase in production.[11]

To control the production of a basic commodity, the Secretary was empowered to establish "base acreage" or "base production." For example, in the case of wheat the base acreage for any individual producer was the average acreage planted from 1928 to 1932, inclusive. In some cases alternative bases were permissible. The growers of flue-cured tobacco were given four options as to base acreage and production: (*a*) the average of the years 1931, 1932, and 1933; (*b*) 85 per cent of the average

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[10] *Ibid.*, p. 312.

[11] Most of these products had not been subjected to supervised control, but production quotas have been issued from time to time. The provisions of the Steagall Amendment were to terminate when this emergency created by the war no longer existed.

of any two years in the period 1931 to 1933, inclusive; (*c*) 80 per cent of the year 1933; or (*d*) 70 per cent of the year 1931 or the year 1932.[12]

A somewhat different problem confronted the Secretary in the control of cotton and hog production. The great supply of cotton that had been accumulated under the Administration of the Federal Farm Board (see Chapter 24), had created a situation that called for immediate action. Not only were bases established for 1934, but farmers were required to plow up from 25 to 50 per cent of their 1933 planted cotton acreage. Hogs were also in over-supply. To remedy this condition "an emergency pig-sow slaughter was carried out in August-September of 1935."[13]

Under the 1933 Act the Secretary was empowered to enter into contractual agreements with individual farmers to control output. Such agreements were voluntary. In the 1936 Act a referendum was provided under which producers were given the opportunity to vote on controls. A referendum on any commodity was to be held 30 days after a national marketing quota was fixed by secretarial fiat. Whenever the Secretary found that the current supply of any basic commodity exceeded a so-called "reserve supply," a referendum could be held, and a control program put into effect if two-thirds of qualified voters participating in the referendum voted in favor of such a program. In this manner the agreements with producers were changed from a voluntary to a compulsory basis and were applicable to all growers or producers.

2. Payments. Under the situation that existed in 1933 farmers were quite willing to cooperate with the Secretary in a production-control program, but not without some recompense. This, of course, was anticipated by the Congress, and cooperative payments, at first called "benefit payments" and later "adjustment payments," were provided. These payments were calculated in various ways, and for some products the method was quite complicated. For wheat the payments made to individual

[12] See Tobacco Production Adjustment Contract, Form T-30b, Sec. 3 of "Performance by Producer."

[13] E. G. Nourse, and others, *Three Years of the Agricultural Adjustment Administration*, p. 102. Washington, D. C.: Institute of Economics of the Brookings Institution, 1937.

growers were approximately 30 cents a bushel on 54 per cent of average production in the base period—that is, 1928-1932.

An example of a multiple payment plan is found in the case of flue-cured tobacco.[14] There was a rental payment of $17.50 per acre of all tobacco acreage removed from production in 1934. This payment was to be made not later than February 15, 1934. An additional payment, called an "adjustment payment," was possible.

(*a*) If the base tobacco acreage is four (4) acres or more, this payment shall equal twelve and one half per cent (12½%) of the net market value of the tobacco grown on this farm in 1934 for market, up to an amount equal to the initial production allotment for this farm.

(*b*) If the base tobacco acreage is less than four (4) acres, the rate of this payment shall be increased one half of one per cent (½%) for each one tenth (1/10) of an acre difference between four acres and the base tobacco acreage, except that in no event shall the rate exceed twenty-five per cent (25%) of the net market value of the tobacco specified in clause (*a*) above.

In no event shall the adjustment payment be based on a net average market price exceeding twenty-one cents (21¢) per pound.

If the amount of the 1934 tobacco crop of this farm which is grown for market is for any reason less than the initial production allotment, then there shall be paid, as a part of the adjustment payment, two cents (2¢) for each pound that said amount falls short of the initial production allotment.[15]

Some flue-cured tobacco growers could obtain a price-equalization payment in the event that they sold their tobacco prior to October 28, 1933. Section 20 of the Tobacco Production Adjustment Contract states:

If the producer sold all or any part of his 1933 tobacco crop from this farm through an auction warehouse market prior to and including October 28, 1933, there shall be paid for the benefit of the producer and such share tenants and/or share croppers as had an interest in such tobacco, a price-equalizing payment on the net proceeds from the producer's original sales of such tobacco, provided application is duly made in accordance with a form to be provided by the Secretary. Said price-equalizing payment shall be twenty per cent (20%) of such net proceeds from such tobacco so sold from August 1, 1933, to September 1, 1933, inclusive, and ten per cent (10%) of such net proceeds (1) from such tobacco (other than that sold on the South Carolina and Border

[14] Tobacco Production Adjustment Contract, Form T-30b.

[15] *Ibid.*, Sec. 19.

markets) so sold from September 25, 1933, to October 7, 1933, inclusive, and (2) from such tobacco so sold on the South Carolina and Border markets from September 25, 1933, to October 28, 1933, inclusive. This payment shall be made within sixty (60) days after the application for same has been approved by the Secretary [16]

This provision was necessary because of an operation explained under marketing contracts in which flue-cured tobacco growers were to receive not less than 17 cents a pound for all tobacco sold in 1933. But since some growers had already sold their crop before the contract was announced, this price-equalization payment was provided.

3. Marketing agreements. Among the powers granted to the Secretary was the power "to enter into marketing agreements with processors, associations of producers, and others engaged in the handling, in the current of interstate or foreign commerce of any agricultural commodity or product thereof. . . ."[17] This power was to be used to effect changes in amounts of a product to be sold, in marketing methods, in prices paid to producers and charged consumers, in marketing margins, and in trade practices. From the time of the passage of the 1933 Act through 1935, 51 such agreements were consummated covering a wide range of farm products.[18] A few illustrations will help to indicate the nature of these agreements and their specific objectives.

a. Tobacco. In the case of flue-cured tobacco, the 1932 market price was 11.6 cents per pound.[19] The correction of this situation called for immediate action. Instead of waiting for production control to take effect, the Secretary negotiated a one-year agreement, effective September 25, 1932, with the chief tobacco manufacturers. Under the provisions of this contract the buyers agreed:

(1) To buy, during the period September 25, 1933 to March 31, 1934, a quantity of tobacco equal to that purchased during the twelve months ending June 30, 1933.

(2) To buy in the same manner as usual, and not to purchase a larger percentage of high quality tobacco, nor to concentrate their buying operations in any geographical area.

[16] *Ibid.*, Sec. 20.

[17] Agricultural Adjustment Act of 1933, Sec. 8 (2).

[18] E. G. Nourse, *Marketing Agreements Under the A.A.A.*, pp. 52-3. Washington, D. C.: The Brookings Institution, 1935.

[19] United States Agricultural Statistics, 1940, p. 168.

(3) To pay an average price of 17 cents per pound for all flue-cured tobacco.

(4) To supply the Secretary with such information as he might need in administration of the agreement [20]

In case any buyer failed to buy his quota of tobacco [see item (1)], a deficiency payment was required. This payment was calculated on the quantity that the buyer failed to purchase to reach his quota multiplied by 17 cents per pound. In the event that the "quota" was purchased but did not average 17 cents a pound, a deficiency payment would be required to bring the average up to 17 cents per pound. All of these payments were made to the Secretary.

b. Peanuts. Peanuts was another crop that was in a critical condition, but unlike tobacco, peanuts was not one of the basic commodities; hence the only method by which peanut growers could obtain assistance was by negotiating a marketing contract. The price of peanuts in 1932 was $21 per ton, a drop from a predepression year of 1920 of $108 per ton. An agreement was signed by the millers and shellers whereby the prices to producers ranging from $55 to $65 per ton were fixed for various types and grades of peanuts.

c. Milk. There were fifteen milk agreements. One of the first was one covering the Chicago area. The Chicago Milk Council, Inc., representing twenty-one large distributors, entered into an agreement with the Secretary, which became effective August 1, 1933. Among the provisions of this contract was one that established a producer price of $1.75 per 100 pounds of milk 3.5 per cent butterfat. Unlike the previous agreements considered, the price of $1.75 was identical with the current market price. All that the agreement sought to accomplish with respect to prices was to bind all distributors to pay the agreement price. However, on November 3 the price was advanced to $2.10 per 100 pounds of milk 3.5 per cent butterfat.

Most of the milk agreements were terminated February 1, 1934 because of repeated violations of some or all of their provisions, especially the price schedules. Although attempts were made to perfect both the agreements and the administration arrangements, nothing in the way of legal and workable agree-

[20] Harold B. Rowe, *Tobacco Under the A.A.A.*, pp. 114-115. Washington: D. C., The Brookings Institution, 1935.

ments was perfected, and all Federal-sponsored milk marketing agreements were abandoned.

4. Price supports. Congress found that parity for agriculture was an elusive objective. But with a faith equal to that of Sir Galahad and with the astuteness of Machiavelli, it pursued its search for a means of accomplishing this objective, elusive or not. It was this doggedness that led Congress into the area of price supports. To the extent that other methods failed to achieve equality for agriculture then the price of farm products would be held up or supported. This was to be accomplished by governmental loans on basic agricultural commodities, including milk and its products. The Commodity Credit Corporation[21] was the agency designated to perform this function.

The procedure, as outlined in the Agricultural Adjustment Act of 1938 for supporting prices, is quite simple. For example, in the case of wheat:

> The Corporation is directed to make available to cooperators loans upon wheat during any marketing year beginning in a calendar year in which the farm price of wheat on June 15 is below 52 per centum of the parity price on such date, or the July crop estimate for wheat is in excess of a normal year's domestic consumption and exports, at rates not less than 52 per centum and not more than 75 per centum of the parity price of wheat at the beginning of the marketing year. In case marketing quotas for wheat are in effect in any marketing year, the Corporation is directed to make available, during such marketing year, to noncooperators, loans upon wheat at 60 per centum of the rate applicable to cooperators. A loan on wheat to a noncooperator shall be made only on so much of his wheat as would be subject to penalty if marketed.[22]

These advances are so-called "nonrecourse" loans. If in the event that market prices of the loan commodity advance above the loan rate, plus the cost of the loan, the farmer has the privilege of selling the commodity and paying the loan. On the other hand, if the market prices remain below the loan price, then the farmer may deliver the commodity to the Corporation and cancel the loan.[23]

The price support mechanism was boosted into high gear by the passage of the "Steagall Amendment" in 1941. This

[21] This was a governmental agency created in October, 1933, by executive order.

[22] Agricultural Adjustment Act of 1938, Sec. 302 (b).

[23] William G. Murray, *Agricultural Finance*, p. 306. Ames: Iowa State College Press, 1947.

was a World War II emergency measure to be abandoned two years after the President or the Congress declared an end to the war emergency period.[24] Essentially, this legislation provided that the price support mechanism could be used, during the war emergency, when the Secretary "finds it necessary to encourage the expansion of any nonbasic agricultural commodity." The support price for all such commodities was not to be less than 90 per cent of "the parity or comparable price thereof." Under this power the Secretary announced support prices for "well over 150 farm products."[25]

Recent Legislation

1. Agricultural Act of 1948. The President, via a proclamation, ended the World War II emergency period on December 31, 1946. Since the provisions of the Steagall Amendment would be terminated at the end of 1948, Congress was faced with the task of providing new farm price legislation. Such legislation was provided by the Agricultural Act of 1948, which set up two price support schemes—price supports that would prevail during 1949 and price supports that would begin in 1950.

Generally the first of these schemes provided for a continuation of existing price supports. There was, however, a different classification of farm commodities. In a summary of the 1948 Agricultural Act this classification was:

(1) *Basic commodities.* The basic commodities corn, cotton, peanuts, rice, tobacco, and wheat are given mandatory price support through loans, purchases, or other operations at the following rates if producers have not disapproved marketing quotas: To cooperators (those who do not exceed farm acreage allotments), 90 per cent of parity; to noncooperators, 54 per cent of parity, and only on so much of the commodities as would be subject to penalty under the Agricultural Adjustment Act of 1938 if marketed.

(2) *Steagall commodities.* (*a*) Irish potatoes harvested before January 1, 1949, milk and butterfat, hogs, chickens, and eggs marketed before January 1, 1950, are given mandatory price support at 90 per cent of the parity or comparable price; (*b*) . . . Dry peas (certain

[24] The wording of the amendment as to the time and method of termination is: ". . . until the expiration of the two-year period beginning with the 1st day of January immediately following the date upon which the President by proclamation or the Congress by concurrent resolution declares that hostilities in the present war have terminated. . . ." (Warren C. Waite and Harry C. Trelogan, *Introduction to Agricultural Prices*, p. 209. Minneapolis: Burgess Publishing Company, 1948.)

[25] Warren C. Waite and Harry C. Trelogan, *op. cit.*, p. 214.

In providing price support for nonbasic commodities, the Secretary is required to take into consideration . . . broad legislative standards.

(3) For the excepted products [see (2) above] the price supports are to be put into effect as follows:

(*a*) Wool: The Secretary . . . is directed to support the price of wool at such level not less than 60 per cent and not more than 90 per cent of parity as he may consider necessary to encourage an annual production of 360,000,000 pounds of shorn wool. . . .

(*b*) Irish potatoes: The Secretary . . . is directed to support the price of Irish potatoes at not less than 60 per cent and not more than 90 per cent of parity.

(4) *Perishable nonbasic commodities.* Support may be given to any perishable nonbasic commodity by operations undertaken with respect to a storable commodity processed from such perishable nonbasic agricultural commodity. A further exception is made to permit the Secretary to support the price of any such perishable nonbasic agricultural commodity through other means available.[27]

Although the Act provides for an upper limit of 90 per cent of parity, this may be exceeded if the Secretary finds that for any commodity a market price equal to 90 per cent of parity is not a sufficient incentive to obtain a given level of production. The given level of production means that output which may be needed for national security. Prices needed to accomplish such an objective are called "price incentive supports."

The Congress that provided the 1948 Agricultural Act did not exhibit its customary astuteness. This was evidenced by the restrictions placed upon the activities of the Commodity Loan Corporation. As pointed out, support prices are made effective first by the establishment of production and marketing quotas and the buying and selling operations of the Commodity Credit Corporation. Under the 1948 Agricultural Act the actions of the Corporation are limited as follows:

. . . the Commodity Credit Corporation shall not sell any farm commodity owned or controlled by it at less than (1) a price determined on a pricing basis for its stocks of such commodity on hand, which makes due allowance for grade, type, quality, location, and other factors and which are reasonably calculated to reimburse it for costs incurred by it with respect to such stocks; (2) a price halfway between the support price, if any, and the parity price of such commodity; or (3) a price equivalent to 90 per cent of the parity price of such commodity, whichever price is the lowest. Certain sales are excepted from this directive

[27] *Ibid.*, p. 3-4.

which permits sales to prevent loss or waste through spoilage, sales for other than primary uses, and sales for other specified purposes.[28]

Such provisions would, under certain price trends, create enormous stocks that might be difficult to liquidate. (See Chapter 23, "Farm Board Operations.") And since support prices are not an objective *per se* but a means to an end, such limitations appear contrary to previous policy.

2. Agricultural Act of 1949. The 81st Congress looked at the 1948 Agricultural Act and decided to enact a bill of its own, which is called the "Agricultural Act of 1949." This Act changed the price support provisions of the 1948 Act in several important respects.

a. Classes of commodities. The Act established three groups of price-supported agricultural products. (*a*) The "basic" commodities now comprise corn, cotton, wheat, rice, tobacco, and peanuts; (*b*) the "designated nonbasic" commodities include wool, mohair, tung nuts, honey, Irish potatoes, milk, butterfat, and the products of milk and butterfat; (*c*) other nonbasic commodities. For the first two groups, price supports are mandatory, whereas supports are permissive only in the case of the third group. These will be supported at the discretion of the Secretary of Agriculture.

b. Price supports. As in the so-called Aiken Bill (Title II of the 1948 Act), price supports in the 1949 Act are generally flexible within the range of 60 per cent, or 75 per cent, to 90 per cent parity. The market price of various agricultural commodities will be supported within that range, depending upon the level of supply anticipated for the marketing year in which supports are to apply. This level of supply is expressed in percentage variations upward from 102 per cent (108 per cent for cotton) to 130 per cent of the "normal" supply figures, which are derived from average consumption, exports and imports, and carryovers.

Flexible supports, however, do not apply across the board. In fact, each of the three groups mentioned above will be treated differently.

Basic commodities must be supported at a flat 90 per cent of parity in 1950, and at no less than 80 per cent in 1951 under

[28] *Ibid.*, p. 6.

the following conditions. Producers must not have disapproved marketing quotas; acreage allotments or marketing quotas must be in effect; only producers who do not knowingly exceed their acreage allotments are eligible. Flexible supports will apply if producers have not disapproved marketing quotas, and if no acreage allotments or marketing quotas are in effect. If producers disapprove of marketing quotas, the support level may be as low as 50 per cent of parity. After 1951, the flexible support scheme will apply if marketing quotas have not been disapproved. Tobacco, however, will be supported at 90 per cent of parity throughout, as long as marketing quotas are in effect.

Designated nonbasic commodities, wool, tung nuts, honey, and Irish potatoes, must be supported between 60 per cent and 90 per cent of parity. Whole milk, butterfat, and their products must be supported between 75 per cent and 90 per cent of parity. For the latter products, price supports must operate through loans on, or purchase of, processed milk products, such as butter, cheese, and evaporated milk. No flexible scale is provided for these products.

Other commodities may be supported provided that certain conditions apply. Among these conditions are the supply of the commodity in relation to demand, the price levels at which other commodities are being supported, the availability of funds, and the perishability of the commodity.

c. Moving base and labor cost of the "new" parity. The 1949 Act provides a "new" or modernized parity formula, which takes into consideration prices received by farmers during the last ten years, including subsidy payments received during the war. With respect to prices paid, the formula makes allowance for wages paid by farmers to hired hands. Parity prices as calculated with the new formula may not drop more than 5 per cent per year below what they would be as computed with the old formula. In addition, until 1954, parity prices for the "basic" commodities will be based on whichever of the two parity calculations results in the higher parity price.

The effect on parity prices of the new method, as compared to the old, may be shown by the calculation of the parity price of wheat according to each formula.

"Old" formula. If the average market price of wheat for the

period of 1909/14 was $1.00 per bushel, and the index of prices paid by farmers, including taxes and interest (but not labor), was 240 in October 1949 on the base of 1909/14 equal to 100, the parity price of that date was then $2.40—that is, $1.00 times 240.

"New" formula. If the average price of wheat during the last ten years was $2.00, and the index of prices received during the same ten years was 225 on the basis of 1909/14 equal to 100, by dividing the average price of $2.00 by the index of prices received, the "new," or adjusted base price of $.908, or roughly 91 cents, is computed. The "new" parity price would then be $.908 times 240, except that the index of prices paid must now include labor cost. The Department of Agriculture announced that labor costs raise the index by about 6%, that is, by about 14 points; the index to be used is therefore 254. This number multiplied by the "adjusted" base price of $.908 gives the "new" parity price for wheat. In our imaginary example, that price would be $2.31, instead of $2.40 under the "old" formula. Since wheat is one of the basic commodities, the "old" parity price of $2.40 would have to be used for establishing the support price level of 90%.

d. Forward pricing. In order that farmers may be able to allocate their resources from products in over-supply to those of under-supply, the Secretary may announce, indeed is directed, in so far as feasible, to announce the level of support prices for field crops in advance of the planting season, and for other farm products at the beginning of the marketing season. These forward prices, once announced, would not be reduced during the period to which they apply.

e. Financing price supports. To make calculated support prices effective may, and usually does, require the purchase of commodities by the government. This function is performed by the Commodity Credit Corporation and other designated agencies. Under the term of the 1949 Act

> The Commodity Credit Corporation is prohibited from selling any basic agricultural commodity or storable nonbasic commodity at less than 5 per cent above the current support price of such commodity, plus reasonable carrying charges, subject to certain exceptions, as follows: (*a*) sales for new or byproduct uses; (*b*) sales of peanuts and oilseed for extraction of oil; (*c*) sales for seed or feed if such sales will not substantially impair any price-support program; (*d*) sales of commod-

ities which have substantially deteriorated in quality or when there is danger of loss or waste through deterioration or spoilage; (*e*) sales to establish claims arising out of contract or against persons who have committed fraud, misrepresentation, or other wrongful acts with respect to the commodity; (*f*) sales for export; (*g*) sales of wool; and (*h*) sales for other than primary uses.[29]

It is possible to dispose of "surplus" commodities by means other than sales. The Secretary and the C.C.C. are permitted to dispose of products that "are in danger of deterioration or spoilage before they can be disposed of in the normal domestic channels without impairing the price support program" but only "in making payments for commodities not produced in the United States."

To further protect the domestic middlemen from governmental competition, farm products may be used for school lunch programs, public welfare organizations, relief of Indians, and other people in need outside of the United States (see Chapter 3).

f. Penalties. Whenever marketing quotas are in effect, a producer is subject to a penalty if his production exceeds his quota. For example, the Act specifically states that, if a rice producer exceeds his quota, he shall pay a penalty of 50 per cent of the parity price of the product as of June 15 of the calendar year in which the crop is produced.

Achievements

As a result of these governmental activities, has agriculture advanced towards economic equality with other sectors of our economy?

If anyone attempts to answer this question, he must keep in mind the congressional definition of equality. The Congress stated, in effect, that agriculture and the remaining sectors of the economy were in state of "equality" during the base period from August, 1909 to July, 1914, inclusive. That is, it was assumed that during the base period farmers were getting their "fair share" of the national income. This, of course, is an assumption that has never been definitely proved to be even approximately correct.[30] Nevertheless, it can be accepted as a

[29] The Agricultural Act of 1949 (A Digest), U. S. Department of Agriculture, Production, and Marketing Administration, October, 1949, p. 7.

[30] For a more extensive discussion of this subject, see Edwin G. Nourse and others, *Three Years of the Agricultural Adjustment Administration*. Washington, D. C.: Institute of Economics of The Brookings Institution, 1937.

base or starting point to determine the effectiveness of the Agricultural Adjustment programs.

1. Aggregate basis. According to existing data, the net income to persons living on farms during the base period was approximately 21.6 billion dollars, and for the economy as a whole it was 174.1 billion dollars. Thus, for the base period the net income of persons living on farms was 12.41 per cent of the total national income. In 1932, the year prior to the enactment of Agricultural Adjustment legislation, this figure was 5.24 per cent, which indicates that agriculture, from a national point of view, was far from the assumed "equality" with other sectors of the economy. However, during the next six years, or from 1933 to 1938 inclusive, the relative position of agriculture was improved. Although the national income for these years totaled some 351.5 billion dollars, the net income of persons living on farms had reached a total of 27.9 billion dollars, or 7.94 per cent of the total national income. But, even so, this was far from the position enjoyed during the base period.[31]

What governmental programs failed to do, war activities, in part at least, accomplished. From 1939 to 1946, the total national income aggregated 1,011.2 billion dollars, whereas for the same period the net income of persons living on farms totaled 87.7 billion dollars—that is, agricultural net income was 8.67 per cent of the aggregate income of the United States.[32]

2. Per capita basis. A much better case can be made for the Agricultural Adjustment programs if contrast is made between agricultural and other sectors of the economy on a per capita income basis. The reason for this is that, whereas farm population declined between 1933 and 1938, nonfarm population increased. By transforming the income from an aggregate to a per capita basis the effect of the relative changes in population become apparent. Assuming that the ratio of the per capita farm income and the per capita nonfarm income is 100 for the base period from August 1909 to July 1914, then any change in this ratio should indicate the position of agriculture relative to the rest of the economy. In 1932 this ratio was 60.8, or 39.2 points below the base period. The average ratio

[31] U. S. D. A. *Agricultural Statistics*, 1942, p. 663, and 1946, p. 538.
[32] U. S. D. A. *Agricultural Statistics*, 1947, p. 538.

for the next six years, or from 1933 to 1939, is 95.3, or only 4.7 below the base period. As in the case of the aggregate income, the World War II activities raised the per capita income ratio position of agriculture to 162 in 1945, or 62 points over the base period.[33]

3. Area basis. Because the farm programs were based on specific products, the aggregate and per capita bases are defective as devices to show how these programs affected the income of individual states. Although data are not available for the base period, it is, however, possible to indicate how the cash income from the sale of farm products behaved in each state after the programs were started. If it is assumed that the total cash receipts for each state in 1932 was 100, then any change in this index up to 1938 should indicate the extent to which the cash receipts in each state were affected by the programs. The results of such a manipulation of the data indicate that there was considerable variation in the rate at which the cash receipts increased. There were 13 states, the cash income of which increased less than 50 per cent; 24, from 50 to 90 per cent; and 11, from 100 to 139 per cent.

From this analysis it would appear that the Agricultural Adjustment programs had some effect on the rate of change in cash receipts of the several states. The states that were affected most were those in which the basic commodities are the important sources of income. But the effect may be more apparent than real. That this is so is evident from the fact that national distribution of cash receipts among the several states in 1932 was almost identical with the distribution in 1938 and 1947. This similarity is shown in Table 35, which is based upon the accumulative cash receipts by the states, when the states are arrayed according to the magnitude of their cash receipts in 1932. If the programs had any effect whatsoever, it would have changed the distribution and thus, in turn, would have separated the accumulated data for 1938 and 1947 either toward or away from equal distribution. That this did not occur shows that the Agricultural Adjustment programs did not affect the national distribution of farm income. And this in turn probably indicates that the economy of the several states is so integrated with the national economy that the Agricultural

[33] *Ibid.*, p. 566.

Adjustment programs of the period from 1933 to 1938 affected the farm income of all states in about the same proportion as they affected the income of the nation.

4. Commodity basis. It is quite true that the aim of Congress was parity for agriculture as a whole, but farmers are always interested, although perhaps never satisfied, in obtaining an increase in income. This was especially true of farmers in 1932 when the prices of their products reached very low levels. That the income from basic commodities increased is evident from

TABLE 35

PERCENTAGE AND TOTAL DISTRIBUTION OF CASH RECEIPTS FROM FARM MARKETINGS, UNITED STATES, 1932, 1938, 1947*

	Percentage Distribution				*Total Receipts (000,000)*		
Per Cent of States†	*Equal Distribution*	*1932*	*1938*	*1947*	*1932*	*1938*	*1947*
20	20	3.53	3 80	3.37	$ 197	$ 349	$ 1,142
40	40	13.44	13 07	14 37	638	1,067	4,382
60	60	26.33	27 45	26.99	1,328	2,399	8,738
80	80	50 39	51 88	51 34	2,340	4,238	15,658
100	100	100 00	100 00	100 00	4,767	8,168	30,500

* Source "Cash Receipts from Farm Marketings," January 1946, "Farm Income Situation," United States Department of Agriculture, June-July, 1948

† The states were arrayed according to the 1932 cash receipts The same order was kept for 1938 and 1947

available statistics. The income from the sale of cotton, including income from cottonseed, increased 40 per cent between 1932 and 1938; the income from tobacco, 155 per cent; wheat, 124 per cent; corn and hogs, 105 per cent (corn 144 per cent and hogs 95 per cent); rice, 121 per cent; dairy products, 41 per cent; all agricultural products, 72 per cent. These data mean, therefore, that the incomes of the basic commodities were affected more by the programs than were the incomes of the nonbasic commodities.

The situation was not greatly altered after 1938 when the Agricultural Adjustment programs were broadened to include nonbasic commodities. From 1938 to 1947, inclusive, the income from cotton lint and cottonseed increased 246 per cent; tobacco, 250 per cent; wheat, 544 per cent; corn and hogs, 369 per cent (corn 400 per cent, hogs 360 per cent); rice, 370 per

cent; and dairy products, 192 per cent. By contrast the cash receipts from all farm commodities increased 214 per cent.

5. Distribution of income. It was implied, although not stated, that the governmental programs should be directed not only to increasing the level of farmers' income, but also to effecting a more equitable distribution of income among individuals. For the farm population as a whole the programs apparently did not achieve this objective, for the income in 1930 was more

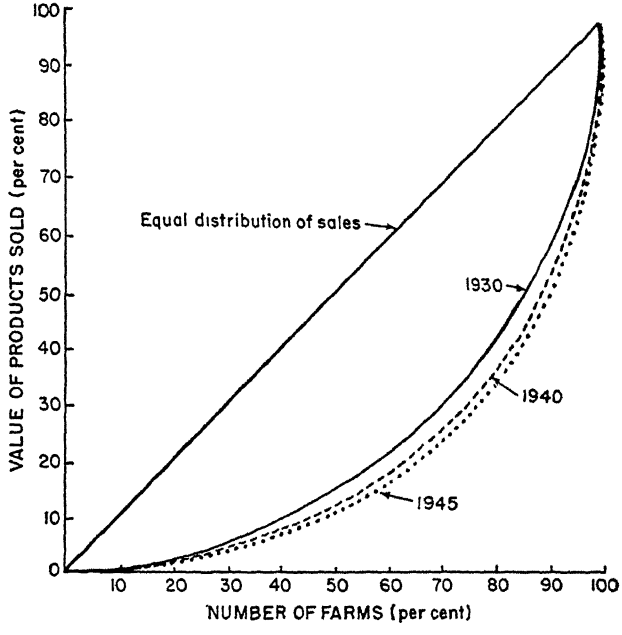

FIG. 43 THE EFFECT OF THE AGRICULTURAL ADJUSTMENT PROGRAM ON THE DISTRIBUTION OF FARM INCOME.

equitably distributed than in 1940, eight years after the programs were put into effect. That this is probably true may be shown from an analysis of the data on the value of farm products sold, traded, or used in households.[34] These data are given by specified income groups (for example, under $250, $250 to $399). For each income group the number of farms is also given. From such data the amount of income that is associated with the number of farms can be determined. For example, for 1930 the number of farms in the lower income group—that is, less

[34] United States Census, 1940.

than $250—is 397,517 and the income (value of products sold, traded, or used in the household) associated with this group is $49,690,000. When each of these two sets of data are added in order of the income size group and then expressed as a percentage of the total, they can be used to determine the degree to which incomes are equally distributed among the farms. For example, if 10 per cent of the farmers should receive 10 per cent of the income and 20 per cent receive 20 per cent, and so forth, the income would be distributed equally. (See Figure 43.) But any departure from this behavior indicates the extent to which the incomes are unequally distributed.[35] When the available data are analyzed in this fashion, it is apparent that the incomes in 1930 (the nearest to 1932 for which data are available) were more equally distributed than in 1940, eight years after the programs were put into effect. Nor did World War II activities bring about a more equitable distribution.

Criticism of Governmental Programs

There have been sharp differences of opinion regarding the need for governmental interposition in farming, as to the adequacy of the programs and validity of the results achieved. To the critics, the interference of government in the conduct of an important sector of a free enterprise economy not only set a dangerous precedent but constituted an unnecessary departure from traditional national policy. There was nothing in the situation, although it was freely admitted that it was unfortunate, that could not be corrected by the operation of the law of supply and demand. To be sure, it might take time, and many difficulties might be encountered. Farm incomes would be low for a time, some farmers might lose their farms, tenants and croppers would be evicted. All these things had happened before and the nation, with it agriculture, had not only survived but had surged to new and greater levels of prosperity. The position of this group is well stated by W. M. Curtiss of the Foundation for Economic Education as follows:

Summarizing briefly, price supports, like other forms of price controls, are not an answer to the important problem of bringing reasonable

[35] This discussion should not be interpreted as advocating equal distribution as a desirable condition. The method is used simply to test the effect of programs on the distribution.

stability to our economy—of eliminating major swings in our general price level caused by monetary inflation and deflation. In addition to its failure to reach this objective, price supports rob us of the most important function of free prices—the guiding of production and consumption of goods and services in accordance with the wishes of those directly concerned.

. . . Such controls lead to complete economic domination of citizens by agents of the State.[36]

There were a considerable number of persons who viewed the programs as justified experiments in governmental participation in the management of our economy. These experiments were to be studied, and the results reported. Joseph S. Davis, one who took this position, and with Edwin G. Nourse and John D. Black, studied the early programs and reported on their results. Commenting on the achievements from the Agricultural Adjustment programs up to and including 1935, Davis said:

. . . The devices employed by the A.A.A. were broadly incapable of attaining the objectives sought—true "adjustment," "price parity," "income parity," and real production control through voluntary contracts. Moreover, "adjustment" as it was commonly viewed in the A A A., "parity prices" as defined in the basic act and its amendments, controlled production within practicable limits, and "income parity" as defined in the 1936 act, are not internally consistent objectives whose attainment would promote the welfare of agriculture or the nation. Constructive achievements there were, but various major and minor steps that were taken appear in retrospect mistaken, and the net gain properly attributable to the A.A.A. to date is moderate, not large. Nevertheless, "adjustment" properly conceived is the right fundamental goal of policy; and A.A.A. experience, if properly used, can bring us nearer to that goal.[37]

As the "experiments" continued, more attention was directed to refining the "equality" concept and to devising ways and means by which equality for agriculture could be attained. The contents of a report submitted to the American Farm Economic Association, "The Redefining of Parity Price and Parity Income," contains suggestions on what should be the major objective of the governmental programs and how it may be implemented. This committee says:

[36] W. M. Curtiss, "Price Supports," *In Brief*, Vol. 2, No. 3 (March, 1949), p. 19. New York: The Foundation for Economic Education, Inc. Irvington-on-Hudson.

[37] E G. Nourse and others, *Three Years of the Agricultural Adjustment Administration*, pp. 481-2. Washington, D. C.: Institute of Economics of the Brookings Institution, 1937.

We do not subscribe to the proposition that "economic equality for agriculture" is to be found through the manipulation of the prices of individual agricultural products. Nor do we believe that the perpetuation of historical relationships between agricultural and nonagricultural prices, and among agricultural prices themselves, is in the long-run interest of farmers or of the nation.[38]

After criticizing the concept of parity prices and the defect in their computation, the authors of this report suggest, not the abandonment of governmental programs but "an over-all parity-income approach" to the problem of equality. This suggested "parity-income approach" was essentially a method of making lump-sum governmental payments to farmers, according to the contribution of each farmer to the total "market value of the products they (farmers) produce and sell."[39] These payments are designed to maintain agricultural income on an equality with other sectors of the national economy. To determine the type and magnitude of such individual payments would mean the devising of some formula by which the proportion of the total national income that should be assigned to agriculture could be computed. The formula, according to the committee, would be:

Parity, as applied to income, shall be that per-capita net income of individuals on farms that gears to the per-capita net income of individuals not on farms the same relation as prevailed during the most recent normal peacetime period characterized by high-level production and employment in industry and trade.[40]

This formula, if applied, would mean that no payments would be made to farmers if the per capita income index of farmers in any year was equal to or more than 100. However, if this index should drop below 100, payments would be made, but they would not be high enough to restore the ratio to 100. For:

In using parity income as a guide in computing the aggregate amount of supplemental income payments due agriculture in depression periods, we propose that the payments not equal the full difference between the computed parity income and the actual income, but rather a somewhat smaller amount, for example, the difference between 90 (or 85) per cent of parity income and actual income. This decision rests mainly on the

[38] *Journal of Farm Economics*, Vol. XXIX, No. 4 (November, 1947), Part II, pp. 1361-62.
[39] *Ibid.*, p. 1367.
[40] *Ibid.*, p. 1368.

conviction that complete relative stability of the farm-nonfarm income ratio is too ambitious a goal.[41]

According to the committee, another limitation was desirable:

To avoid payments at the full scale to very large producers, a sliding scale might be developed. For example, payment might be at the full rate on the first $5,000 of sales and at a progressively lower rate on each succeeding increase of $5,000 of sales. Such a graduated scale of payments departs from one of the principles underlying this proposal, namely, to pay in accordance with production in order to encourage maximum individual effort. Nevertheless, there are valid objections against large government payments to very large producers such as those operating corporation and nonfamily type farms.[42]

O. V. Wells, a member of this committee, objected to the direct payment plan although he recognized that the over-all parity-income approach was in accord "with those of a great many other economists and that the use of commodity supplemental payments might be preferable (in some instances) to direct price supports." He said:

However, it seems to me that these are all special cases or advantages, "other things being equal." The disadvantages of the payment proposal and equally important, the chances that such an alternative would offer a *stable* and an *acceptable* solution to the difficulties with which commercial farmers may soon be faced, must also be considered

In many cases, I doubt if the payment proposal would automatically lead to the "clearing" of the market. At the same time, the use of the scheme as suggested would certainly not encourage the carrying of surplus production from high yield into *deficit* years—*deficit* either in terms of low yield or sharply increased demand. I further doubt whether either "free" prices or free price associated with the proposed non-commodity payments would allocate resources as between farmers and between commodities in as wise a manner as is sometimes claimed. I see no need for developing these items in detail. All I want to do is simply emphasize the question as to whether the economic advantages of the payment proposal are not limited indeed.

There is an equally strong question in my mind as to how well farmers themselves might accept the payment solution. We already know of course that farmers and their representatives are generally opposed to direct aid via Government check. It seems to me that these feelings are something more than mere bias, that as a matter of fact there are sound grounds for this opposition, both cultural and operational. Spe-

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[41] *Ibid.*, pp. 1368-69.
[42] *Ibid.*, p. 1371.

cifically, the solution of all our difficulties through direct government spending is by no means a generally agreed upon remedy, even among agricultural economists; the proposed payment program is frankly designed for only intermittent use as an offset to relatively severe declines, which might well mean that it would have to be planned, debated, and legislated anew each time it was used; and finally, Americans generally simply do not like to feel themselves dependent upon direct subsidies or Government checks except as a last resort.[43]

From this report and other statements that could be presented, there is no evidence that governmental participation in the control of agriculture is to be abandoned.

Questions

1. How would you characterize congressional thinking at the beginning of 1933 with respect to laissez faire?
2. What were the alternative plans that Congress might have used to accomplish "intersectional adjustments"?
3. Specifically, what was the policy with respect to agriculture laid down in the Agricultural Adjustment Act of 1933?
4. Why were certain provisions of the Agricultural Adjustment Act of 1933 declared unconstitutional?
5. Name the methods provided in the several Agricultural Acts by which the policy of the Congress could be achieved.
6. Discuss production controls and "benefit" payments.
7. Why were marketing agreements necessary?
8. Discuss briefly the "Tobacco Marketing Agreement."
9. What is the specific nature of price supports?
10. How are price supports made effective?
11. State briefly how the Agricultural Adjustment Acts of 1948 and 1949 differed from the previous A.A.A. Acts.
12. To what extent did the various Federal control programs achieve the congressional policy of "equality" for agriculture.
13. State the chief criticisms levied against the governmental control programs.

References

Vunce, Arthur C., *Economic Nationalism and the Farmer*, Chapters II and III. Ames: Collegiate Press, Inc., 1938.

Hibbard, Benjamin Horace, *Agricultural Economics*, Chapter 26. New York: McGraw-Hill Book Company, Inc., 1948.

Nourse, Edwin G., and others, *Three Years of the Agricultural Adjustment Administration*. Washington, D. C.: Institute of Economics of the Brookings Institution, 1937.

[43] *Ibid.*, pp. 1374-1376.

Schultz, Theodore W , *Agriculture in an Unstable Economy.* New York: McGraw-Hill Book Company, Inc , 1945

Wilcox, Walter W , *The Farmer in the Second World War,* Chapter 23. Ames: Iowa State College Press, 1947.

CHAPTER 26

The Brannan Proposals

IT WAS the 80th Congress that diluted the farm price support program by the simple device of reducing the price support level to a low of 60 per cent and not more than 80 per cent of parity, except for the "price incentive supports." By this modification of the price support program, the Congress abandoned the policy for "full" equality for agriculture in the national economy. The advocates of a full parity for agriculture, however, did not abandon their position. Under the leadership of the Secretary of Agriculture, Charles F. Brannan, a plan was advanced that, in breadth and content, made previous attempts to formulate price income programs for agriculture out-moded.

Objectives of the Brannan Proposals

Secretary Brannan did not hesitate to state the major objectives of his proposals. Briefly, these objectives, either directly stated or implied, were:

1. To place agriculture on an economic parity with other sectors of the national economy;
2. To stabilize the national economy at a high level of industrial and commercial activity;
3. To provide (*a*) a level of farm output that would permit all consumers an equal chance to buy the products of the farm, and (*b*) a reservoir of farm products that could be tapped in years of short supplies and for national security;
4. To assure the restoration of depleted agricultural resources and maintenance of all agricultural resources at a high level of productivity;
5. To maintain the family farm as an ideal farming unit.

In presenting these objectives to the Congress, Mr. Brannan gave his reason why each should be included in an effective agricultural support program. As to the first objective, he said:

It concerns our effort to assist farmers to maintain a reasonably stable income at a fair level—a level which is equitable to farmers and in the best interest of the other economic groups within our population.[1]

This is a general statement. More specifically, Mr. Brannan stated in regard to an equitable farm income:

. . . that level of total cash returns from farm marketings which is equivalent in purchasing power to the average purchasing power of cash receipts from farm marketings during the 10 calendar years 1939 through 1948. Purchasing power in any year shall be measured in terms of an index of prices paid by farmers for goods and services, including interest and taxes.

Speaking of the role of a farm income support program in maintaining industrial and commercial activity at a high level, the Secretary remarked:

I don't mean to say that declines in farm prices are the sole cause of depressions, but they certainly contribute greatly and would do so more now than in the past because agriculture has become a bigger customer of industry.

The Secretary also indicated the interdependence of agriculture and nonfarm business by stating:

Altogether the American farmer has lately been a $30,000,000,000 customer of American business.

Even so, rural people represent a vast, untapped market for all sorts of goods. For example, half of the commercial family farms in this country are small, and in this group only 22 out of 100 homes have running water. For most of the other family farms, the comparable rate is 38 per 100, and in the top group, 58 per 100 have running water.

Farm people want to buy industrial goods, but when their prices go down in relation to the prices they have to pay, they have to cut their buying.

In support of his third objective, the Secretary cited the effect of stable farm prices on the level of agricultural production.

Stable farm prices and incomes encourage high-level production with the greatest assurance of reasonable prices to consumers. This is one of the most significant lessons from our wartime experience Without the cost-plus contracts and guaranties enjoyed by many industries, and with only reasonable price protection, farmers quickly made great shifts in the use of their productive resources to meet war needs. They

[1] All citations in this chapter, unless otherwise specified, are from "Statement by Secretary of Agriculture, Charles F Brannan." Reprinted from Congressional Record, Thursday, April 7, 1949

supplied civilians with a fourth to a third more milk and a fifth more meat than prewar while they were meeting the needs of the armed forces and also sending large amounts of food to our allies. Farmers, like manufacturers, want to produce what their customers want But usually it is only with advance knowledge of minimum price that small individual producers, planning separately, can unify their efforts efficiently to increase the total supply of a peculiar commodity.

And again:

An effective farm program is essential to our national security, will provide a reservoir of goods which protects the nation against crop failure, and will assure supplies for an even flow of world trade. Reserve supplies above ground and their counterpart—reserve strength in the soil—are essentials of national defense. A large livestock population is also reserve strength. Before the last war, when we had to convert our nation quickly into an arsenal of democracy, we were extremely fortunate in having large reserves of grain and cotton. Without having to wait for another harvest, we were able to start converting grain into the high-protein foods that were sorely needed by our friends abroad. Plenty of cotton was available for war uses. Several years of intensive soil-conservation effort had improved many acres of land which had suffered abuse.

Soil conservation was made an integral part of the policy in the Agricultural Adjustment Act of 1936. This policy is continued in the Brannan Proposals. In support of its inclusion, the Secretary, after indicating the interest of city people in soil conservation, said:

. . . Our soil, water, and forest resources must support a population that is still growing, and our objective is a higher standard of living for the people as a whole. Yet we are still losing productivity on hundreds of thousands of acres every year. Half of all our cropland is still subject to erosion. Obviously, conservation depends on something more than good farm prices. On the other hand, resources can be conserved and improved only if they are used profitably.

And points out that:

Price supports can aid conservation in at least two ways: (*a*) by bringing additional stability into the farm business so that farm people can enjoy a good standard of living without mining their resources, and (*b*) by directly encouraging types of farming which naturally conserve resources.

The family farm, as an ideal farming unit is essential, stated the Secretary, because it can

. . . help maintain individual opportunity in our free-enterprise system. One bulwark of democracy may be found in the prosperous rural community mainly composed of economically strong families farming in the traditional American pattern. It is an ever-present answer to communism.

Secretary Brannan in his statement to Congress summarized his position as follows:

I have listed six ways in which a good farm income and price support program can serve the interests of all the people. It can help do these things: Prevent depression, build bigger industrial markets and employment, maintain high-level production of farm commodities, conserve natural resources, maintain reserves for national security, and strengthen the rural community.

Brannan Proposals vs. A.A.A. Legislation

1. Income support standard vs. parity price as a goal. These objectives of the Brannan Plan do not differ radically from those that characterize all A.A.A. legislation. From the very beginning of what has been called "New Deal" farm legislation, the Congress has stated over and over again that it is in favor of maintaining agriculture on a purchasing power parity with the nonagricultural sectors of the national economy. The essential difference between the Brannan Proposals and past and present legislation is the manner in which the major objective is to be accomplished, not the objectives. Mr. Brannan sets as his major objective what he calls an "Income Support Standard" by which farmers may achieve a purchasing power parity. He states:

. . . If there is anything new in what is here proposed, it is the recommendation that we actually start our computations with an income criterion as the base on which price supports are determined. We have had income criteria in our laws—so-called parity income definitions—but, so far, we have not used them. Since income is what finally counts, I think it is time to start relating support prices to an income standard.

This, as the Secretary stated, is not a new concept (see Chapter 25), but, to provide such an income standard for farmers, dependence has been placed upon "parity prices." In using the "Income Support Standard" idea, the Secretary did not propose to abandon parity prices but did contend that parity prices

as such is not the objective, but simply a means by which "income purchasing power parity" may be achieved.

2. Basic and nonbasic products. The concept of basic and nonbasic commodities, which characterized the Agricultural Act of 1948 (see Chapter 25), was abandoned in the Brannan Proposals. In place, Secretary Brannan suggested a classification of salable farm products based on perishables and nonperishables or on storable and nonstorable products. This classification is logical from the point of view of the Secretary, because different means must be provided to effect parity for the nonstorables than for those products that are storable. And the Secretary's proposals provide mechanism by which these two classes of products may be supported.

3. Production control and marketing quotas. Secretary Brannan did not propose that production controls or marketing quotas be abandoned. But these means of effecting market prices shall be used—

> . . . to curtail wasteful production or disorderly marketing (such measures as acreage allotments, marketing quotas, and marketing agreements which may be adopted from time to time through referendums or by the authority of the Secretary under terms of specific legislation such as is now on the statute books).

Furthermore, the Secretary provided a new type of control when he suggested:

> The limitation of eligibility for price support to a defined volume of production on each farm—a volume high enough to benefit most farms but one which will not encourage the development of extremely large, industrialized farming.

4. Fixed base vs. moving base period. In all of the A.A.A. legislation up to the Agricultural Act of 1948 a fixed base, usually 1910-1914, was used to measure the extent to which prices should be supported in order to achieve parity. This is known as the "fixed" or "historical base system." In the Brannan Plan this type of base is abandoned in favor of a 10-year moving base. Commenting on this subject, the Secretary said:

> In developing an income-support standard which can be translated into a price schedule, I start from the firm conviction that the particular formula or formulas should be based on recent experience and not related or chained back to some distant base period. Any such formula

should reflect as far as possible the advancements in agricultural knowledge, facilities, and skills.

5. Methods of supporting prices and income. The Secretary proposed to support his program in two ways: (1) For the nonperishable products "prices will be supported by nonrecourse loans" extended to producers through the Commodity Credit Corporation (see Chapter 25). (2) The prices of perishables or nonstorable products will be supported not by government purchases but by direct payments to producers. According to this plan no attempt will be made to affect market prices as such—that is, for this class of products the normal market prices will prevail. Discussing this subject before a congressional committee the Secretary stated:

> I recommend that the prices or returns of these first priority, group 1 (corn, cotton, wheat, tobacco, whole milk, eggs, farm chickens, and the meat animals—hogs, beef cattle, and lambs) commodities be maintained at not less than the full support price standard. It should be clearly understood that the support price standard is not a ceiling.
>
> . . . Commodity loans and purchase agreements are methods well adapted to the support of storable commodities which can be carried over without processing for a number of marketing years if necessary. Storables account for roughly 25 per cent of our annual cash receipts from farm marketings and include cotton, corn, wheat, and other grains, tobacco, the oilseed crops, dry beans and peas, wool, and peanuts. These are not all equally storable, but experience has shown that loans and purchase agreements are effective for all the commodities on this list. Nevertheless, it would be desirable to have available, as a supplementary method, the authority to make production payments under certain circumstances.

The Mechanics of the Brannan Plan

Because this plan provides for the maintenance of a parity "income support standard" it requires (1) a method for computing such a standard and (2) a method of achieving the standard. These two constitute the mechanics of the plan.

1. Calculation of the income support standard. The income support standard is defined as "that level of total cash returns from farm marketings which is equivalent in purchasing power to the average purchasing power of cash receipts from farm marketings during the 10 calendar years 1939 through 1948." The steps by which this standard is calculated are as follows:

a. Total cash marketing receipts. Calculate total cash market-

ing receipts from farm products for 10 years, beginning 12 years prior to the time the standard is to become effective. For example, suppose that the standard is for 1951, then the cash receipts from 1939 to 1948, inclusive, will be used. This provides a two-year lag between the 10-year period for which the support standard is calculated and the year in which the program became effective.

b. Purchasing power. Express the total cash receipts for each year in purchasing power. This calculation is made by dividing the receipts for each year by a parity cost index, which

TABLE 36

INDEX NUMBERS OF PRICES PAID BY FARMERS CHANGED FROM 1910-14 AS BASE TO 1938-39*

Year	*Index*† *1910-14 = 100*		*Index 1939-48 = 100*
1939	124	÷ 170.8 × 100 =	73
1940	125		73
1941	132		77
1942	150		88
1943	162		95
1944	169		99
1945	172		101
1946	193		113
1947	231		135
1948	250		146
Total	1,708		1,000
Average	170.8		100.0

* Source: U S D. A. *Agricultural Statistics*, 1948, p 585, U S D A, *The Agricultural Situation*, Vol. 33, No. 9 (September, 1949), p. 15.

† Index of prices paid by farmers for all commodities, including interest and taxes.

is based on the cost of things farmers buy, including taxes and interest. This parity index also has a moving base, the first 10 years of a 12-year period.

The way in which this parity index is computed for the period from 1939 to 1948, inclusive, is illustrated in Table 36.

c. Purchasing power equivalent of cash receipts. When the calculations of (*a*) and (*b*) are made, the results give the average cash receipts in purchasing power. The average for the years 1939 to 1948, inclusive, is 18,218 billion dollars. To transfer this sum into an income standard for 1951, the 18,218 billion

dollars is divided by the purchasing power index for a recent month (for example, March 15, 1949). In this illustration 18,218 billion dollars multiplied by 1.44 [the purchasing power index for March 15, 1949 — (1939-1948) = 100] gives the income standard for 1951, or 18,218 × 1.44 = 26,230 billion dollars.

2. Price support standard. Since the income support standard can be achieved only by the sale of farm products, it is necessary to set *price support standards* or prices that will insure the accomplishment of the income standard. This means, in effect, that Secretary Brannan wants to accomplish full 100 per cent parity and not 90 per cent or less. These price support standards are calculated as follows:

a. Adjustment factor. (1) Determine or estimate the average cash receipts for a 10-year period (for example, 1940 to 1949, inclusive). (2) Calculate the ratio of the farm marketings to the income standard. This is known as an "adjustment factor." To illustrate how this ratio is determined, Secretary Brannan used the income support standard for 1951 as determined in 1(*c*) above, which is 26,230 billion dollars. The average cash receipts from 1940 to 1949, inclusive, are 20,980 billion dollars. The rate is 26,230/20,980 or 1.25.

b. Commodity price supports. To obtain the price support standards for each commodity, the average market price over a 10-year period (for example, 1940 to 1949, inclusive) is multiplied by the adjustment factor. Suppose, for example, that the average price of wheat during the period 1940-1949, inclusive, is $1.50 per bushel; then the price support standard for wheat for 1951 would be $1.88 per bushel or equal to $1.50 × 1.25. The price support standards for all other commodities are calculated in the same manner.

3. Method of supporting perishable products. The Brannan Plan differs radically from all previous legislation in the method of supporting the income from the sale of perishable products. In the past and also according to present legislation (see Chapter 25), the prices of these products were supported through governmental purchase or disposition. In the Brannan Plan this method is abandoned and all perishable products are to be sold at the current market price. The parity price support standard for each of all such commodities will be achieved by

making direct governmental payments to producers equal to the difference between the parity price standards and the average current market price. For example, if the current market price of eggs is 35 cents per dozen and the standard support price for eggs is 45 cents per dozen, then the 10 cents per dozen would be paid on each dozen eggs sold. Or, in the words of the Secretary:

> The term "production payment" means exactly what it says—a payment to the farmer to go on producing to meet genuine consumer need, rather than restricting output short of that need.
>
> Under this system the farmer would be paid in cash the difference between the support standard for commodities which he produces and the average selling price for those commodities in the market place. Because the payment would go directly to the farmer it would be an efficient support operation.

4. Volume of production eligible to support. The Brannan Plan sets limits to the amount of farm output per farm that will be eligible for supports. This is to be accomplished by calculating for each farm what may be called "commodity production units."[2]

Secretary Brannan says:

> . . . The operators of all farms, no matter how large would receive benefits of the price support program to the extent of 1,800 units of the commodities grown on that farm. Farms which produce in excess of 1,800 units would not enjoy support on the excess. This would exclude part of the production on approximately 2 per cent of the farms of the nation.

These units are calculated in the following manner:

a. Each commodity is assigned a stated quantity equivalent to one commodity unit; for example, 10 bushels of corn, 7.77 bushels of wheat, 52.16 pounds of cotton, 154.97 pounds of potatoes are each equivalent to one commodity unit.

b. The number of units for any specific commodity is determined by (1) expressing the value of a unit of all commodities in terms of standard prices and (2) dividing the standard price value of 10 bushels of corn by the standard price of a unit of any other commodity. In short, the basis of the arithmetic is 10 bushels of corn; for example, 10 bushels of corn at the standard price for 1951 is equal to 10 × $1.46 or $14.60. To obtain

[2] The Secretary did not name this unit. The term used is that of the authors.

the number of units to be assigned to wheat, this sum is divided by the standard price of wheat, which is $1.88. This operation ($14.60 ÷ $1.88) yields 7.77, which is equal to the number of units assigned to this product.

c. The total commodity units for any one farm are obtained by calculating the number of units for each product and then adding these units. The method used for a specific farm is shown in the following tabulation:

1	2	3	4
Commodity	*Quantity Sold*	*Quantity Equivalent to One Unit*	*Total Units (Col. 2 ÷ Col 3)*
Wheat	1,010 bu.	7 77 bu.	130
Oats	1,200 bu.	11 97 bu.	100
Corn	1,000 bu.	10 00 bu.	100
Tobacco (flue-cured)	37,200 lb.	29 68 lb.	1,253
Cotton	52,000 lb.	52 16 lb.	997
Hogs	152 cwt	.76 cwt.	200
Eggs	1,600 doz.	31.88 doz.	50
Total units			2,830
Eligible units			1,800
Excessive units not subject to support			1,030

Evaluation of the Brannan Proposals

It has been said that there is nothing new in the Secretary's proposal, that all of the concepts he uses either have been defined in existing or previous legislation or are embedded in the literature on this subject (see Chapter 25). Such a statement is technically correct, but the Brannan Plan is the first to come to grips with the subject of "parity income" for agriculture. Any evaluation of the Brannan Plan must be made, therefore, not in saying that it is "old stuff" but in determining whether or not it can achieve its major objective.

Secretary Brannan poses as his major objective the achievement of an "income parity" for farmers. He gives a definite meaning to this concept by proposing "an income standard." He admits that such a standard does not close the gap between the purchasing power income of farmers as a class and the purchasing power income of urban groups. Whether or not the gap should be closed or, in fact, whether or not there is such a

gap is not the question at issue. On the basis of past arithmetic such a gap does exist, and the Secretary does not hesitate to say so. He says:

> The factor which has discouraged real use of the parity income definition in the past has been the gap between farm and nonfarm income. This is so wide that a program based on real dollar equality looks unrealistic as an immediate objective. Under the old definition, for example, farmers last year received 160 per cent of the theoretical parity income. But, actually, the average net income of farm people from all sources was only $909 per capita, including the value of home-produced food and income from nonfarm sources, compared with the nonfarm average of $1,569. This puts the average farmer's income at less than 60 per cent of his urban brother's income. Such a definition of parity seems to me indefensible.

The Secretary's major objective, therefore, is not defective, as long as the thesis is maintained, namely, that farmers, for the common good, should have an annual "purchasing power parity." It is possible for one to question the validity of this thesis, but few if any opponents have thought it advisable to do so. To the contrary, criticism has been leveled not at its objectives but rather at its effectiveness to achieve these objectives. Most critics doubt this effectiveness. Their arguments are directed primarily to the weakness of the plan in that (*a*) it fails to provide an effective means of stabilizing farm income in terms of purchasing power, (*b*) it will tend, as previous plans have tended, to "over-price" farm products, (*c*) it does not provide an effective means of redirecting agricultural resources within agriculture or between agriculture and other sectors of the economy, and (*d*) it leaves almost untouched the problem of the "intradistribution" of agricultural income.

1. Stabilizing farm income. Aside from the fact, as admitted by the Secretary, that the plan would not close the income gap between agriculture and other sectors of the economy, the plan, according to most critics, would not provide farmers with additional income when most needed, namely, in the depression years. Schultz is of the opinion that:

> Once a depression exists, and leaving it to the political process to determine to what extent the income of farmers should be maintained, how is this objective to be achieved? Obviously some way must be found of supplementing the income of farmers under these conditions. Here we have the case for "Compensatory Payments." These pay-

ments should accomplish the following: (1) reduce the instability of farm income caused by business fluctuations, (2) to do this in a manner and at a time that will make the payments countercyclical in their effect, and (3) make the payments to farmers in a way that will not disturb agricultural production or the trade in farm products.

This proposal does not envisage the interference of the governments in pricing farm products. It would leave market prices free to clear the supply and demand, regardless of how deep or widespread the depression. Moreover, as an administrative technique, it is fully as applicable to storable as to perishable farm products, and in principle, no distinction should be drawn between them.[3]

2. Market prices versus parity prices. A characteristic of all parity pricing mechanism, including the one proposed by Secretary Brannan, is that the calculated prices are seldom, if ever, those that correspond to actual market prices. From the point of view of the advocates of parity prices, this discrepancy is not due to a defective formula but to a defective marketing system, which has not provided "farmers with meaningful future prices," nor has it performed the storage function at all satisfactorily."[4] But aside from these defects, the important fact is that the "privately organized marketing system has consistently underpriced farm products." From a study made by the Bureau of Agricultural Economics entitled "Long Range Prospect for American Agriculture" it was evident that the only time that "market prices" would equal "parity prices" would be under conditions of high level of employment. Under conditions of "intermediate" employment market prices would be about 85 per cent of parity prices; and for depression conditions, characterized by heavy underemployment, "market prices" would be about 67 per cent of "parity prices." And Schultz points out:

> My own efforts to gauge the value of farm products for the years immediately ahead, say for the next three to five years—assuming that unemployment does not exceed four million, that we export and import farm products at competitive prices, that ample stocks are maintained for emergency purposes, and that agricultural production continues at its present level—indicate that the prices of farm products will rule (average) as much as 15 to 20 per cent below their current relative to other prices. If this were to occur, it would mean, taking the existing

[3] T. W. Schultz, *Production and Welfare of Agriculture*, p. 186. Copyright 1949 by T. W. Schultz. Used with the permission of The Macmillan Company.

[4] *Ibid.*, p. 181.

legal parity as a measure, that farm prices would decline (relatively) from a parity of 105 (as of February 15, 1949) to a parity as low as 85 to 90 provided farm products were allowed to clear the market.[5]

This underevaluation of prices by the privately organized marketing systems or the overevaluation of prices by the parity formula has been effective in (1) reducing the quantity of farm products purchased by consumer and (2) accumulating large stocks of farm products by the Federal government, stocks which for various reasons cannot be made available to the American consumer. Although the Brannan Plan might tend to "overprice" farm products in terms of market prices, except perhaps in periods of high employment, it nevertheless would provide a means of "by-passing" the marketing system. The Secretary proposes that all perishable products shall be sold at the market price, and, when the market prices are less than "support prices," the difference will be paid directly to the producer. This procedure is "a big step forward in getting away from the concealed dumping of farm products into which this country has drifted . . . and away from the price maladjustments imposed by public actions on farm prices within the United States."[6]

3. Redirecting agricultural resources. The inequitable distribution of the national income between agriculture and the urban sectors of the economy, when and if it exists, must be the result of the mal-allocation of the production resources, first, within agriculture and second, between agriculture and other sectors of the economy.

It has been assumed that relative market prices of agricultural products would so direct the resources of the farmer that "over" or "under" production of any one commodity would not occur, or if it did occur the change in prices would automatically correct the situation. Aside from the fact that agricultural resources are not easily redirected, market prices are ill adapted to bring about necessary changes in the volume of farm commodities. It is a just criticism of the Secretary's Proposals that the support prices would not be effective in redirecting the farmers' resources and in thus adjusting farm output. To focus attention on this defect, Schultz suggests:

[5] *Ibid.*, p. 181.
[6] *Ibid.*, p. 177

An important alternative procedure in pricing farm products would be to undertake a system of forward prices to complement the existing price-making institutions. This step would strengthen such institutions in precisely the area in which they are weakest, since they do not provide farmers with a set of relative prices that are efficient as production guides, but instead impose much unnecessary uncertainty upon farmers. The basic characteristics of forward prices are few in number and extremely simple: (1) The prices should be announced sufficiently far in advance to enable farmers to adjust their production programs to the prices; (2) the prices should cover a sufficient amount of time to permit farmers to complete their production plans; (3) the prices or price schedules which are announced should be clear and precise so that farmers can readily interpret their implications for themselves; and (4) the prices or price schedules adopted should be those which achieve the desired output. It is plain that the Secretary of Agriculture has not proposed a system of forward prices which will achieve the output desired and to announce them in advance of the time farmers make their commitments for the next production period. Again and again economists have taken pains to point out that prices based on parity, whether they be tied to 1910-14 or to a recent 10-year period are inescapably backward in their orientation. Parity is dependent upon a formula. The formula is dependent upon history, and history does not choose to repeat itself. No formula based on either the near or distant past can tell us much about the present value of farm products, and even less about the relative prices that will be efficient in guiding agricultural production. There are, of course, ways of making any particular parity or income standard less harmful than it would otherwise be; one way is to allow a wide range of administrative discretion as in the early AAA legislation, and another way is to build in various kinds of flexibilities. The merit of Title II of the Agricultural Act of 1948 lies in the fact that it provides a much needed kind of flexibility.[7]

4. The distribution of agricultural income. Although the major objective of the Brannan Plan is to increase agriculture's share of the national income, it implies that this share shall be so distributed among individuals that low-income farmers will benefit to a greater extent than higher income groups. That the plan would not do this is readily admitted by the Secretary.

> . . . the price income supports I have suggested, in common with all other price support systems, falls short of meeting the needs of those operators who lack enough good land and enough capital to produce

[7] *Ibid.*, pp. 186-7.

the necessary volume with the necessary efficiency for a good standard of living.[8]

But this is a common defect of present as well as past legislation. To this Schultz agrees and states the plan "does not come to grips with the widespread and socially significant problem of poverty imbedded within agriculture. Instead . . . it proposes to give economic benefits principally to those farmers . . . who are normally fairly well up on the American income ladder."[9]

This criticism is only partially correct. The Brannan Plan does provide a scheme for the distribution of the agricultural

"You fellas wanna hire a good hand?"

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[8] "Statement by Secretary of Agriculture Charles F. Brannan." Reprinted from Congressional Record, Thursday, April 7, 1949.

[9] T. W. Schultz, *op. cit.*, p. 177.

income. The Plan limits the adjustment payments that any producer can earn to 1800 units. In this manner payments to the large scale producers will be less than they otherwise would receive, whereas a farmer producing 1800 units or less will get full payment. Furthermore, the problem of rural poverty is certainly not aggravated because of the Plan. Insofar as rural people are purchasers of perishable farm products, they will benefit because these products will be cheaper since they will be sold at current market prices instead of at the "support prices." But, even so, these provisions will not solve, nor are they designed to solve the problem of rural poverty. The Congress has not faced up to this issue, nor is it likely to do so. To embody an effective scheme, in any farm legislation, designed to solve the problem of rural poverty would be to invite its defeat.

This evaluation of Secretary Brannan's Plan does not consider all the criticisms that have been leveled against it. There is, for example, the question of the cost of the Plan. Although this is an important question it is not, strictly speaking, relevant to the subject. The cost of any program of the magnitude of that proposed by the Secretary must of necessity entail high expenditures of public funds. How large such expenditures must be is difficult to determine in advance of actual experience. Such estimates as have been made are as high as 5 to 6 billion dollars annually or about 2.5 per cent of current national income payments. Presumably, this, or any other percentage, would not be lost to the total economy. It simply means a transfer from one group, especially, but not wholly, from nonagricultural sectors of the economy, to agriculture. The real issue, therefore, is not cost but justification. For one to deny this justification is to challenge the major objective of the Plan. And this evaluation of the Plan has been based upon the acceptance of these objectives, the disregard of which would require not an evaluation of the plan *per se* but the development of an alternative plan.

Questions

1. Why were the Brannan Proposals made?
2. State the major objectives of the Brannan Plan.
3. Select any one of the objectives of the Plan and indicate how Secretary Brannan supported it.

4. In what respect did the Brannan Plan differ from previous "parity" legislation?
5. What is meant by the "Income Support Standard"?
6. How is the "Income Support Standard" derived?
7. What is meant by a "Price Support Standard"? How is it determined?
8. What is meant by a "Commodity Production Unit"?
9. What is the relation of the commodity production unit to payments made to producers?
10. What is meant by the statement "over value farm prices"?
11. What is meant by "redirecting agricultural resources"?
12. To what extent, if at all, does the Brannan Plan attack the problem of rural poverty?

References

"Analysis of the Brannan Plan," Economic Policy Division Series No. 17. New York: National Association of Manufacturers, October, 1949.

Farm Policy Forum. Ames: The Iowa State College Press, July, 1949.

Journal of Farm Economics, American Farm Economic Association, Vol. XXI, No 3.

Schultz, Theodore W., *Production and Welfare of Agriculture*, Chapter 15 New York: The Macmillan Company, 1949.

"Statement by Secretary of Agriculture Charles F. Brannan." Reprinted from Congressional Record, Thursday, April 7, 1949.

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